

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

OFFICIAL ORGAN OF THE ROYAL AERO CLUB OF THE UNITED KINGDOM.

No. 311. (No. 50, Vol. VI.)

DECEMBER 11, 1914.

[Registered at the G.P.O.
as a Newspaper.]

[Weekly, Price 3d.
Post Free, 3½d.]

Flight.

Editorial Office: 44, ST. MARTIN'S LANE, LONDON, W.C.

Telegrams: Truditor, Westrand, London. Telephone: Gerrard 1828.

Annual Subscription Rates, Post Free.

United Kingdom ... 15s. 6d. Abroad ... 20s. 6d.

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being overhauled and repaired in the workshops, and, in the aerodrome near by, of seeing others starting out and returning from reconnaissance duty. His Majesty also examined one of the aeroplanes that had been captured from the enemy, and witnessed some special flights, throughout evincing the same keen personal interest in this great and revolutionary fourth arm that he has always shown during the days of peace. Indeed, as the special account records, "the scene of great activity presented by that portion of the Corps present at General Headquarters must have presented a strange contrast to that other scene at Farnborough some two and a half years ago, when the King, for the first time, inspected the R.F.C., then in its infancy, the total muster being six officers and two inferior aeroplanes."

What a commentary!

The
Proposed
"Industrial
Army"
Badge.

The suggestion originally made in the columns of FLIGHT a fortnight ago that the Admiralty and War Office should undertake the issue of an official badge that can be worn to indicate those em-

EDITORIAL COMMENT.

Guarding the King.

One outstanding feature in the very full and interesting details of the King's visit to the Front last week, issued by the Press Bureau on Monday, was the fact that throughout His Majesty's tour, which extended over a considerable stretch of the French fighting line, as well as over those of the British and Belgian sections in Flanders, the safety of our King was persistently watched over by the Royal Flying Corps, whose members carried out a continuous aerial patrol around the Royal group wherever it journeyed.

As Sir John French, in his last official despatch, stated, almost every day new methods for employing our flying officers are being discovered and put into practice, and we can imagine that no more welcome duty has ever been assigned to them, or so conscientiously carried through, as that with which they were entrusted last week.

At the same time, it is pleasing to find that King George showed his appreciation of the work that had been done in assisting to his safety, by honouring the active headquarters of the Corps with a visit during his short but busy stay with the men in the field. Although His Majesty personally addressed officers and men of the Corps, by his request the normal routine was kept up, the King thus having an opportunity of watching machines

employed on Government work in connection with the maintenance of our forces, and who are consequently not available to join the ranks of either Kitchener's or the Territorial Army, continues to attract considerable attention, and also to meet with the approbation especially of those associated with the aviation movement.

Although we are not yet able to record that the suggestion has been adopted and acted upon by either of the great Government departments, we are glad to be in a position to point out, on the authority of Mr. Mervyn O'Gorman, the Superintendent of the Royal Aircraft Factory, that the Government has recognised this need for, and has already approved the issue of, such a badge, and that it is already in use by those employed at the R.A.F. As will be seen from the accompanying photograph, the badge decided upon consists of a monogram of the letters R.A.F. enclosed in a circle round which are the words "Pro Rege ac Fide," the whole being surmounted by a pair of wings and a crown.



An important condition, and one which we put forward, attaches to the issue of this R.A.F. badge. Means have been adopted whereby it is a purely personal badge only for men who are actually engaged on work for the Government, and it has to be given up directly the men cease to be so employed. This end is secured by requiring the workmen to make a small monetary deposit for the badge, which is returnable upon the return of the badge to the authorities. Furthermore, in order to render them non-transferable—a highly desirable feature in a badge of this kind—an ivory label, on which are inscribed the words, "..... is serving his Country at the Royal Aircraft Factory," is attached to the back.

With such a good example before them the Admiralty and W.O. should find little difficulty in breaking away from the ordinary trammels of officialdom, and with generous speed announce their decision to authorise the wearing of such an official button by all those legitimately entitled to its covering wings. If necessary, we feel sure the individual firms who would be requiring these emblems of honour would be quite willing to purchase them at a small fee, so that their employees may be protected from such side glances as from time to time are forthcoming from those who without thought accept that every man not in khaki is a slacker. We shall hope, therefore, to see the admitted principle quickly extended, so that the many industrial firms throughout the country may enable their employees to carry that outward emblem of honour, intimating to all whom it may concern that by sticking to their posts rather than giving an ear to the blandishments of the recruiting officers—which blandishments, in some cases, include an increase of pay—are rendering full service to their King and country in maintaining a steady output of needed material, not only of aircraft and allied productions, but also of the countless variety of supplies necessary to enable our Army and Navy, in conjunction with our Allies, to bring the great task they have in hand to a successful issue.

**Workmen
as well as
Soldiers
Necessary for
Success.**

In this connection, we are glad to note that the *Commercial Motor* has fallen into line with our suggestion, for in its last issue our contemporary remarks:—"Let those workers who, for the benefit of the country, must be exempt from military service, be distinguished by a badge to save them from molestation and annoyance at the hands of official and sometimes self-appointed recruiting agents."

In countries where conscription is in force, as in those of our Allies, and that of the enemy, the difficulty is not one that is so acutely felt as in the United Kingdom. In their case, although all the available men must answer the mobilisation order, they are not all sent to the front, thousands being retained at their usual occupation, be it that of boot or clothing manufacture, or that of warship, aircraft or gun building, and the like. Such men are, however, still under military obligations if not direct control, and are consequently not subject to the taunts as to non-enlistment which are being experienced, by their *confrères* in this country, who, although not enjoying the protection afforded by the uniform, are none the less doing equally valuable and necessary work.

**A Shortage of
Skilled
Labour.**

Whatever may be our views and those of our readers with regard to the general subject of universal service, it will, we think, be readily agreed that this is not the time to enter into a discussion on the question of

such service. Engaged as we are in the most stupendous conflict the world has ever known, what we at present have to regard as the one and only goal is that one and all must pull together to ensure ultimate success. The *Commercial Motor*, in dealing with this matter of the necessity of the Industrial Army continuing its great share of the fight from the point of view of the supply of military motor vehicles, states:—

"It must be realised that we cannot jointly give full effect to the whole of our military and industrial requirements. There must come a time when it has to be decided which is the more important direction in which our remaining available workers may be employed. All over the country, and in many diverse directions, we are beginning to hear of shortage of skilled labour. . . . The powers that be must decide if further recruiting is to be carried on amongst the workers in this all-important industry of ours. Has the point not been reached when it must be decided whether it be more important to increase the number of motor lorries in the field, or even to maintain the existing fleets, or to draw away the men who can meet such demands to do service in the field? . . . A better distribution and allocation of the available labour of the special kind required for this branch of His Majesty's Forces would have been secured, we submit, had the War Department many weeks ago, taken into its confidence those who, in civilian life, are in touch with the labour conditions of the industry. In that way, it would have been possible to have indicated the classes of men who, in respect of their civilian aid, were more suitably employed in the factories furnishing munitions of war than in the field using or maintaining them."

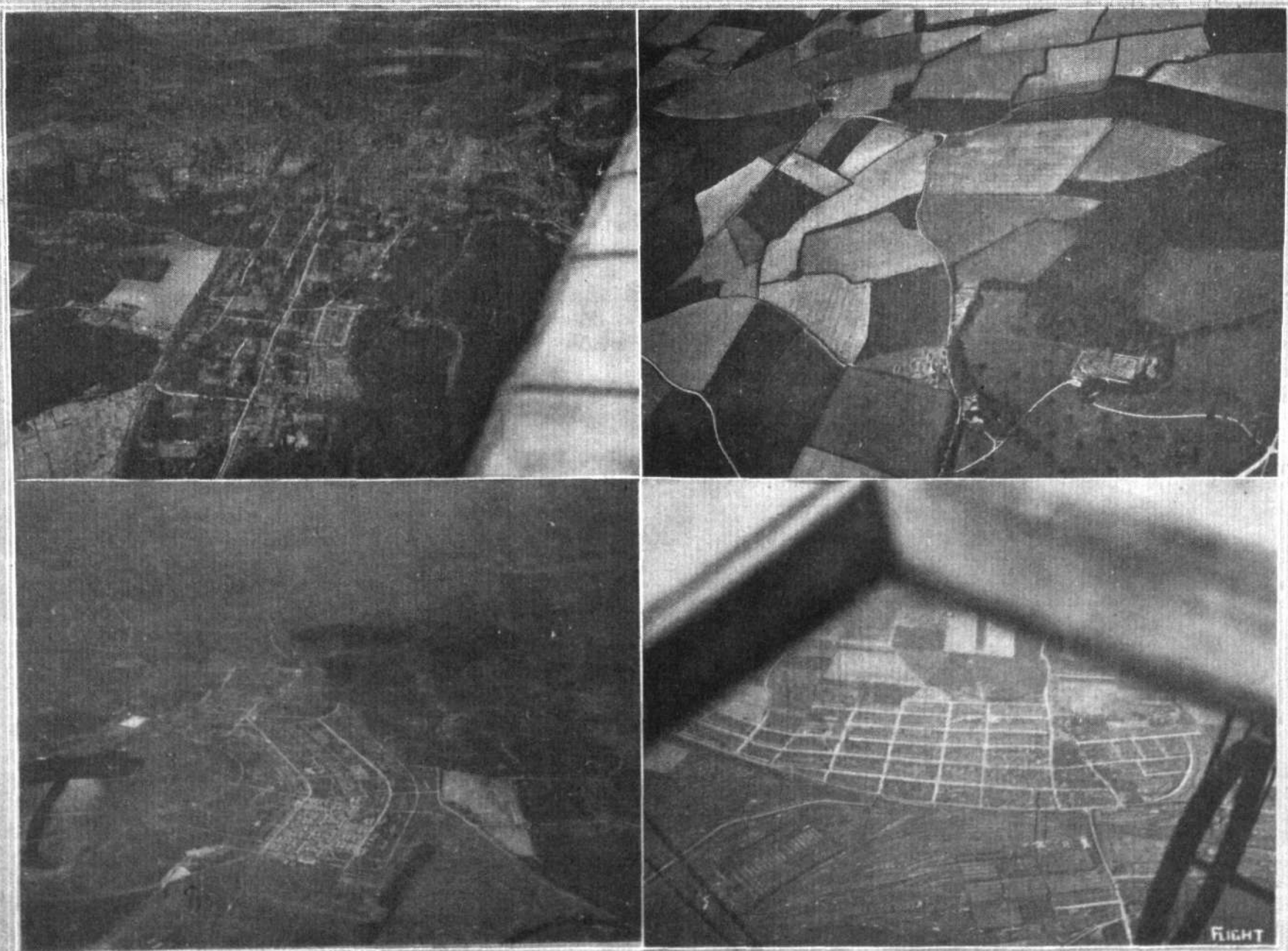
**National
Service
by Tools
as well as by
Arms.**

While we cannot, perhaps, endorse all the views expressed by our contemporary, there is considerable truth in many of them, and these apply not merely to the motor wagon factories, but with equal force to all works engaged on the production of aeroplanes and material therefor, as well as to establishments connected with many other branches of industry that do not come so much under our ken as those associated with aircraft. It is on these grounds that we have urged the issue by the Government of an official badge, which all classes of workmen can wear to indicate that they are in the National Service.

In our Correspondence columns, Mr. Varnier of the Aerial League, while agreeing with our proposal, suggests that different badges should be issued to distinguish between those who are working for the Admiralty and those for the War Office, and also that the words "National Industry, 1914," should be included in the design.

This is purely a matter of detail, and while we see no objection to either of these proposals, except that they may lead to the multiplication of badges, of which there are already far too many (unofficial) in evidence, it must be remembered that there are firms associated with the aircraft industry, and also with the steel trade, whose employees are turning out material for both the Army and the Navy, whilst in other trades the same overlapping would no doubt occur. The one great end to be achieved—and what is done should be done quickly—is the issue of some form of official "Industrial Army" badge, an end against which there can, so far as we are able to judge, be no possible objection.

DECEMBER 11, 1914.



Four photographs taken some time ago by an officer of the R.F.C., from an aeroplane flying at a height of over 4,000 ft. The upper left-hand photograph was taken when over London, while that on the right is a view of Belmore, 9 miles from Winchester. The lower left-hand photograph shows Tidworth Camp, and on the right is Eastleigh Junction.

FLIGHT

especially having regard to the common-sense, straightforward letters issued both by Lord Kitchener and Mr. Churchill to the firms engaged on Government work pointing out that it is recognised the men, in carrying out the work of providing for the requirements of the Army and Navy, are doing their duty for their King and

country equally with those who have joined His Majesty's forces for active service afloat and ashore. We appeal to the Admiralty and to the War Office for once to jump the high fences of official routine, and make announcement of their decision to authorise an official "Industrial Army Badge."

H.M. THE KING

THE following extract is from the account of the visit of H.M. the King to the British lines in France and Belgium, written by the "Eyewitness" present with the British General Headquarters:—

"The last visit paid was to the headquarters of the Royal Flying Corps, where, as in other places, the normal routine was kept up. His Majesty addressed the officers and men of the Corps. Machines were being overhauled and repaired in the workshops, while in the aerodrome others were starting out on reconnaissance duty or returning. His Majesty inspected one of the captured aeroplanes, and witnessed some special flights,

AT THE FRONT.

showing the same keen interest in military aviation that he has always evinced. Indeed, the scene of great activity presented by that portion of the Corps present at General Headquarters must have seemed a strange contrast to that other scene at Farnborough some 2½ years ago, when the King for the first time inspected the R.F.C., then in its infancy, the total muster being six officers and two inferior aeroplanes."

"Throughout his tours the safety of His Majesty has been assured by the Royal Flying Corps, whose members have carried out a continuous aerial patrol above the Royal procession wherever it has been.

AIRCRAFT WORK

In the despatch of Major-General A. Paris describing the operations round Antwerp on October 5th, there was the following:—

"About midday the 7th Belgian Regiment was forced to retire, thus exposing my right flank. A vigorous counter-attack, gallantly led by Colonel Tierchon, 2nd Chasseurs, assisted by our aeroplanes, restored the position late in the afternoon."

In the account from an "Eyewitness" with the British General Headquarters, dated Nov. 29th, and describing

AT THE FRONT.

the bombardment of Ypres, there was the following:—

"The last attack in force was delivered on the 17th of November. Four days later, on the 22nd, the Germans commenced to pour a stream of shell into the central market square; and whereas the Cloth Hall and Cathedral had both escaped material damage up till then, these two historic buildings were blazing fiercely by 3 p.m. It is stated that in order to do this the Germans brought up a train armed with heavy guns, which were used under the direction of a captive balloon."

"MENTIONED IN DESPATCHES."

THE *London Gazette* of December 4th contained a supplementary list of names to be added to those appended to Sir John French's despatch, dated October 8th, 1914 (Supplement to the *London Gazette*, dated October 19th, 1914). See *FLIGHT* for October 23rd.

Among them were the following belonging to the Royal Flying Corps:—

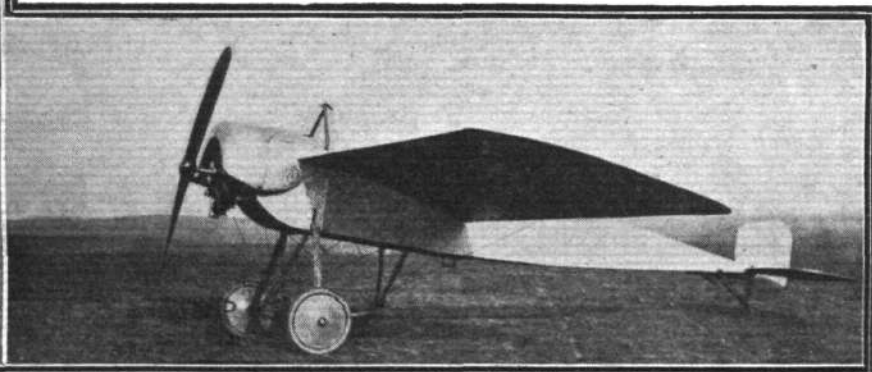
Lieutenant H. D. Harvey-Kelly, Royal Irish Regiment.

Lieutenant W. H. C. Mansfield, Shropshire Light Infantry.

Serjeant-Major D. S. Jillings, No. 9.



Of the new machines built in Germany since the beginning or immediately before the war, one which is likely to be employed against the Allies is the new Fokker monoplane illustrated in the accompanying photographs. This machine, it will be seen, is very reminiscent of the French Morane monoplane, from which it differs chiefly in the design of under-carriage. As shown in the illustration on the left, the chassis is characterised by short stub axles, whilst the shock-absorbers are placed inside the body, the oblique chassis struts passing through a slot in the side of the fuselage. The engine fitted is an 80 h.p. Gnome.



AEROPLANE TYPES.

THE CURTISS TRACTOR BIPLANES.

FOR some time past the Curtiss Co. of Hammondsport, N.Y., have been experimenting with tractor biplanes—a type that has only just recently come into favour in the U.S.A.—and have as a result of their experience turned

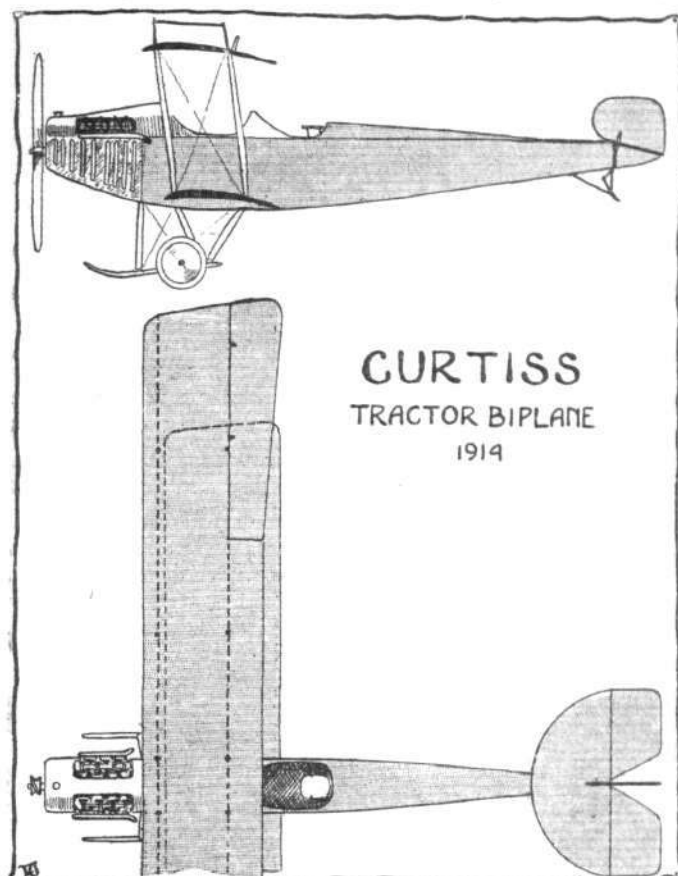


Fig. 1.—Sketch-plan and elevation of the Curtiss model J reconnaissance tractor biplane.

out some machines that compare very favourably with European practice. These have given very satisfactory results, and several have already been delivered to the U.S. Government. Two or three different types of these Curtiss "model J" tractors have been manufactured,

but they only differ in dimensions and details. The model shown in the accompanying sketch-plan and elevation is a two-seater reconnaissance type with pilot and passenger seated in tandem. The planes are similar in construction to those employed on the Curtiss flying boats, but having a different wing section. They are of one-piece construction, with main spars of I section ash, hand-grooved and shaped. The ribs are built up of spruce, and all the important joints are copper bound, whilst the whole frame-work is strongly braced with piano wire internally and with stranded cable for the interplane bracing. The planes are covered with unbleached linen doped with Curtiss oil and water proof dope. Large *aileron*s, measuring 10 ft. by 2 ft., are hinged to the rear spars of the top plane, which has a greater span than the lower. Top and bottom planes are separated by two pairs of laminated spruce struts on either side of the *fuselage*, and in the centre by four struts forming extensions of the *fuselage* struts. The interplane struts are mounted in quick detachable fittings bolted to the spars. The planes are perfectly straight: that is, they have no dihedral angle, but the top plane is slightly staggered forward.

The *fuselage* is of rectangular section tapering to a vertical knife-edge at the rear, and with a turtle-back extending behind the pilot's seat. It is built up of ash *longerons* and nine sets of ash and spruce struts joined by steel clamps in such a manner that the *longerons* are not pierced. Cross-bracing is by steel wire and Binet turn-buckles, which permit easy adjusting for the necessary rigidity. Mounted in the nose of the *fuselage*, on a laminated ash and spruce bed, is the 90 h.p. 8-cyl. V water-cooled Curtiss OX engine, immediately in front of which is the radiator. The whole of the engine is enclosed by a Duralumin bonnet, in the sides of which are louvres. The front of the engine bed is bolted to the *fuselage* nose plate, to which are anchored the *longerons*. At the rear the engine bed is supported by a hard wood cross member connected to the second vertical pair of *fuselage* struts, which are made extra strong for the purpose. Coupled direct to the engine is an 8-ft. Curtiss tractor screw. Just behind the engine is the passenger's cockpit, and behind the latter, at the rear of the main

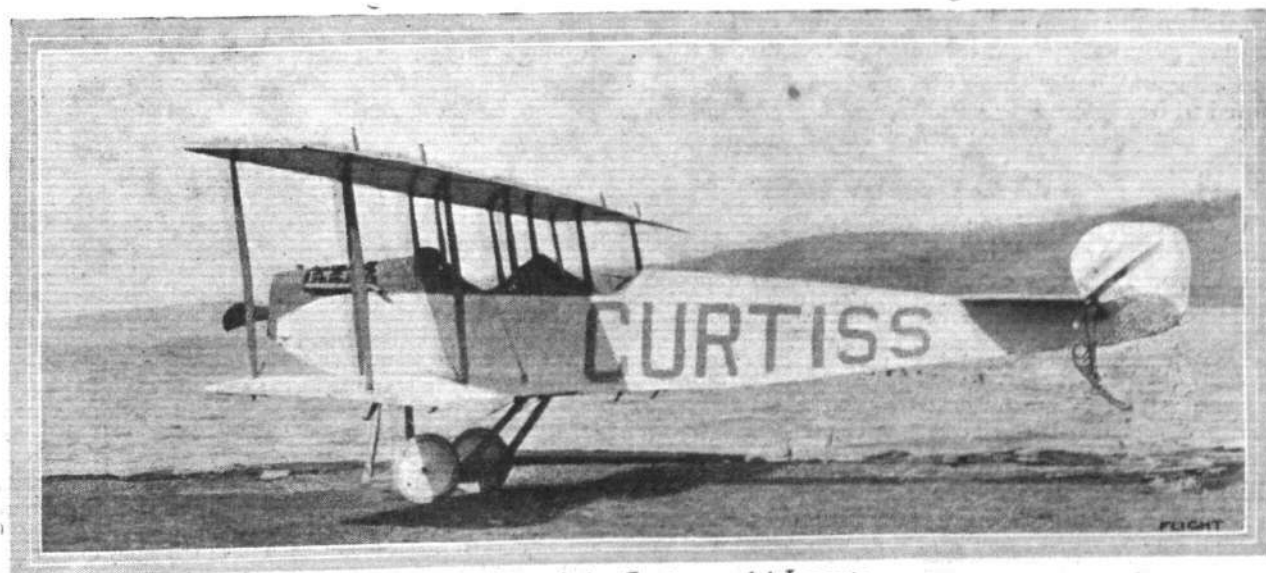


Fig. 2.—One of the Curtiss model J scouts.

planes, is the pilot's, both being protected by streamline cowls. Dual controls are provided, either of the Curtiss shoulder-yoke type or Deperdussin pattern. The maximum depth and width—at the cockpits—of the fuselage is 2 ft. 11 ins. and 2 ft. 2 ins. respectively.

The tail consists of a semi-circular stabilising plane, to the trailing edge of which are hinged two elevator flaps, mounted on the top *longerons* of the fuselage, and a partly balanced vertical rudder pivoted to the last strut of the fuselage. This strut is also extended below the latter in order to carry a sprung tail skid. The chassis consists of two skids 6 ft. long, attached to the lower *longerons* of the fuselage by three pairs of struts each. Sprung to the skids by means of rubber bands is a tubular steel axle

is also somewhat modified. This model has a speed range of 45 to 80 m.p.h. and a climbing speed of 500 ft. per minute. Both these models can be converted into hydro-biplanes for over-water flying by the fitting of a single pontoon float to the chassis in place of the wheels, and as such have been very successful.

The latest Curtiss tractor (Fig. 3), built for the abandoned U.S. Military Trials, shown in one of the accompanying illustrations which we reproduce from our American contemporary *Flying*, differs from the model J tractors in the main planes and chassis. The former, which have a Morane-Saulnier plan form—larger span at the trailing edge—are set at a pronounced dihedral angle, and top and bottom planes are of equal span. The *ailerons*, of

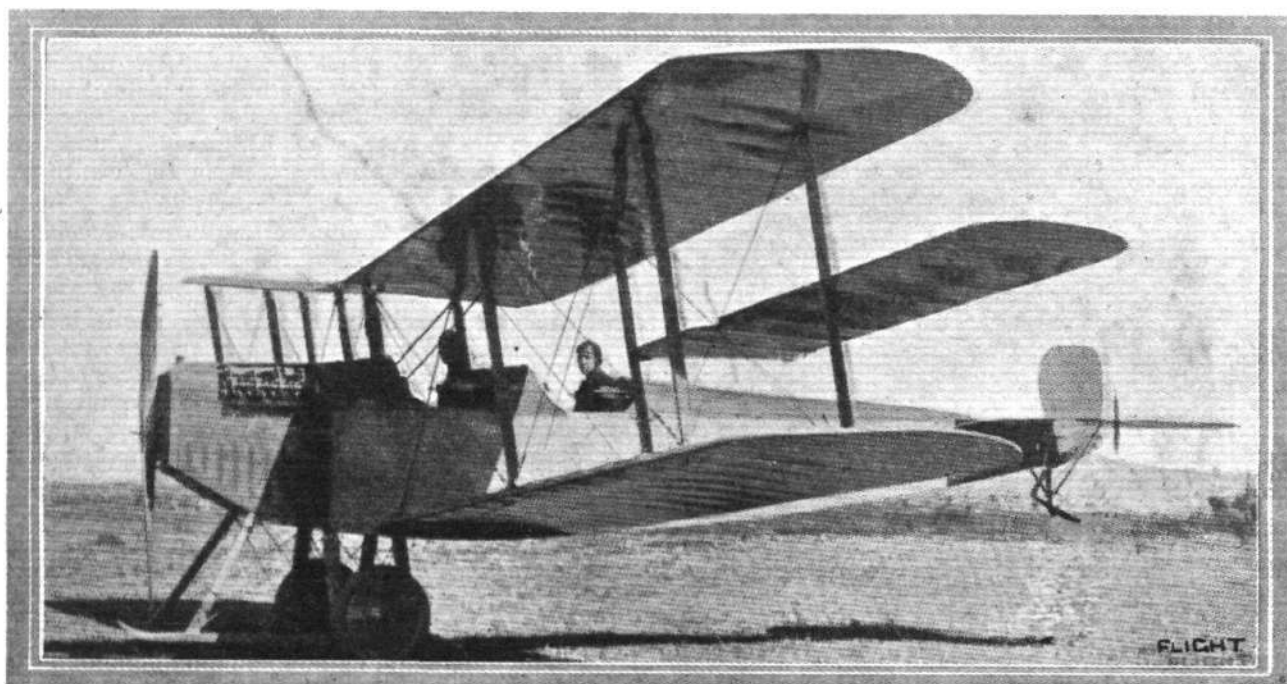


Fig. 3.—The latest Curtiss tractor biplane, built for the U.S. Army Trials.

carrying a pair of disc wheels. The principal dimensions of this machine are as follows:—Span, upper plane, 40 ft. 2 ins.; lower, 30 ft.; chord, 5 ft.; area of main planes, 346 sq. ft.; area of stabilising plane, 30 sq. ft.; area of elevator, 16 sq. ft.; area of rudder, 7 sq. ft.; overall length, 26 ft. 4 ins.; speed range, 45–75 m.p.h.; climbing speed, 400 ft. per min.

Another model made is a scout, which differs from the model just described in that the main planes have a span of 24 ft. top and bottom, and that *ailerons*, 7 ft. by 2 ft., are fitted to both top and bottom planes. The chassis

which there are two, are of substantial size, and are mounted between the top and bottom planes on the two outer rear struts.

The chassis consists of two skids, upturned at their forward ends, which project beyond the tractor screw, connected to the fuselage by three struts each. Two of the latter are connected to the skids close together, one on either side of an axle carrying a pair of running wheels and sprung to the skids. In other respects this machine is very much the same as those previously mentioned.

THE SOVEREIGNTY OF THE AIR.

It was reported from Berne on Monday that the replies of the British and French Governments to the representations made by the Swiss Federal Council regarding the reported passage by British aeroplanes over Swiss territory had been received.

The French Ambassador handed to the Federal Council a declaration by the French Minister for Foreign Affairs expressing sincere regret if it should prove to be the case that there was foundation for the complaint, and adding that if this were so the incident could certainly only be attributed to inadvertency. The French Government valued more than ever Swiss neutrality, and wished that it should be scrupulously respected by French troops, whether it was a question of the actual territory or the air above it.

The British reply stated that the aviators who participated in the attack on the Zeppelin works had formal instructions not to fly over Swiss territory. If, in spite of this, they had done so, it must

be attributed to accident and the difficulty of recognising at a great height the position of an aeroplane. The British note continued:—

"In view of the proofs advanced by the Federal Council establishing the fact of the passage of the aviators over Swiss territory, the British Government gives the assurance that the aviators acted contrary to its intentions, and expresses its deep regret.

"The British Government wishes to take this opportunity of stating that the orders given to the aviators, and the expression of regret for the non-observance of its instructions, are not to be interpreted as a recognition by the British Government of the existence of a sovereignty of the air."

The Federal Council has thanked both Governments for their statements, and has informed the British Government that as international law does not recognise any limit to the sovereignty of the air the Federal Council must claim this sovereignty to its full extent. The Council points out that since the mobilisation of the Swiss Army it has issued instructions accordingly.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Fund for the Benefit of the Air Services.

Preliminary Announcement.

THE Committee of the Royal Aero Club has agreed to organise and administer a War Fund for the benefit of the Royal Naval Air Service and the Royal Flying Corps.

The Lords Commissioners of the Admiralty and the Army Council have suggested the establishment of a general fund to supplement the provision for officers and especially men who are permanently prevented by wounds or injuries received on duty from contributing to their own support, and for the wives and dependents of those who are killed.

Full particulars of the Fund will be announced shortly.

SPECIAL COMMITTEE MEETING.

A Special Meeting of The Committee was held on Tuesday, the 8th inst., when there were present:—Prof. A. K. Huntington, in the Chair, Capt. R. K. Bagnall-Wild, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, Mr. G. B. Cockburn, Major J. D. B. Fulton, C.B., R.F.A., Flight-Lieut. F. K. McClean, R.N.A.S., Mr. Alec Ogilvie, Mr. C. F. Pollock, and the Assistant Secretary.

Fund for the Benefit of the Air Services.—The establishment of a War Fund for the benefit of the Royal Naval Air Service and the Royal Flying Corps was considered, and the following resolution unanimously passed:—

"That a Special General Meeting of the Members of the Club be called to inquire into the advisability of, and if approved to authorise, the Club subscribing the sum of £1,000 to the Fund for the benefit of the Air Services.

"The majority of the Committee are of opinion that this sum should be given.

"The majority of the Finance Committee are of opinion that the financial position of the Club does not justify any contribution."

SPECIAL GENERAL MEETING.

Notice is hereby given that a Special General Meeting of the Club has been convened by direction of the Committee pursuant to Rule 30, and such meeting will be held at 166, Piccadilly, London, W., on Monday, December 21st, 1914, at 5 p.m.

AGENDA.

To enquire into the advisability of, and if approved to authorise, the Club subscribing the sum of £1,000 to the Fund for the benefit of the Air Services.

The following is a copy of the resolution of the Committee convening the Meeting:—

"That a Special General Meeting of the Members of the Club be called to enquire into the advisability of, and if approved to authorise, the Club subscribing the sum of £1,000 to the Fund for the benefit of the Air Services.

"The majority of The Committee are of opinion that this sum should be given.

"The majority of the Finance Committee are of opinion that the financial position of the Club does not justify any contribution."

By Order of the Committee,

B. STEVENSON, Assistant Secretary.

Servants' Christmas Fund.

The Subscription List for this Fund is now open.

Members are reminded that the Club premises are open until 4 p.m. on Saturdays.

166, Piccadilly, W. B. STEVENSON, Assistant Secretary.

THE BRITISH AIR SERVICES.

Royal Naval Air Service.

The following appointment was announced by the Admiralty on the 4th inst.:—

Flight Sub-Lieut. R. Lord to the "Pembroke," additional, for Central Flying School. To date Dec. 7th.

The following appointments were announced by the Admiralty on the 5th inst.:—

Lieuts. D. C. Downing and D. C. S. Evill, to the "Pembroke III," for R.N. Air Service, as Acting Flight Lieutenants. Dec. 4th.

Sub-Lieuts. S. Medlicott, to the "Pembroke III," for R.N. Air Service, as Acting Flight Sub-Lieutenant. Dec. 4th. C. W. H. Pulford and D. Harries, to the "Pembroke III," for R.N. Air Service, as Acting Flight Sub-Lieutenants. Undated.

Mate F. J. Rutland, to the "Pembroke III," for R.N. Air Service, as Acting Flight Sub-Lieutenant. Undated.

The undermentioned Probationary Flight Sub-Lieutenants have been confirmed in the rank of Flight Sub-Lieutenant, with seniority as follows: I. H. B. Hartford, Sept. 7th; C. G. Verner, K. F. Savory, and M. S. Marsden, Sept. 11th; and all appointed to the "Pembroke III," additional, for R.N. Air Service, Nov. 23rd.

Probationary Flight Sub-Lieuts. (temporary) N. B. Tomlinson and G. C. Colmore have been confirmed in the rank of Temporary Flight Sub-Lieutenant, with seniority of Sept. 8th and 11th respectively, and both appointed to the "Pembroke III," additional, for R.N. Air Service. Nov. 23rd.

Temporary Surgeon D. D. Pinnock, to the "Pembroke III," for R.N. Air Service. Dec. 3rd.

THE following appointment was announced by the Admiralty on the 8th inst.:—

Temporary Flight Sub-Lieut. N. B. Tomlinson has been promoted to the rank of Temporary Flight Lieutenant, and reappointed. To date Dec. 5th.

The following appointments were announced by the Admiralty on the 9th inst.:—

Flight Lieut. C. R. F. Noyes, to Air Department at the Admiralty. Nov. 6th.

Gunner G. Bowen, graded as Warrant Officer (2nd Grade) in R.N. Air Service, and re-appointed Dec. 7th.

William M. Pletts has been entered as Probationary Flight Sub-Lieut. for temporary service, and appointed to "Pembroke III" for R.N. Air Service. Dec. 7th.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 3rd inst.:—

Special Reserve. Supplementary to Regular Corps.—The undermentioned appointment is made: Frederick Howard Jenkins to be Second Lieutenant (on probation). Dated Nov. 27th, 1914.

The following appeared in a supplement to the *London Gazette* issued on the 5th inst.:—

Special Reserve. Supplementary to Regular Corps.—John T. C. Moore-Brabazon to be Second Lieutenant (on probation). Dec. 2nd, 1914.

The following appeared in a supplement to the *London Gazette* issued on the 7th inst.:—

The undermentioned appointment is made: Squadron Commander Capt. Gordon S. Shephard, the Royal Fusiliers (City of London Regiment), from a Flight Commander, and to be Temporary Major. Dated Dec. 1st, 1914.

The following appeared in the *London Gazette* of the 8th inst.:—

The undermentioned appointments are made:

Flying Officers to be Flight Commanders. Dated Nov. 28th, 1914: Capt. Harry T. Lumden, the Queen's Own Cameron Highlanders, and Capt. Arthur D. Gaye, the Bedfordshire Regiment.

Flying Officers to be Flight Commanders and to be Temporary Captains. Dated Nov. 28th, 1914: Lieut. Edgar R. Ludlow-Hewitt, the Royal Irish Rifles; Lieut. Dudley S. K. Crosbie, Princess Louise's (Argyll and Sutherland Highlanders); Lieut. Kenlis P. Atkinson, Royal Artillery; Lieut. Baron T. James, Royal Engineers; Lieut. E. L. Conran, 2nd County of London (Westminster Dragoons) Yeomanry, Territorial Force; and Lieut. Edward R. L. Corballis, the Royal Dublin Fusiliers.

The following appeared in a supplement to the *London Gazette* issued on the 9th inst.:—

Special Reserve. Supplementary to Regular Corps.—Second Lieut. (on probation) the Hon. William F. Forbes-Sempill (Master of Sempill) is confirmed in his rank.

E.A.C. SEAPLANE FLOATS.

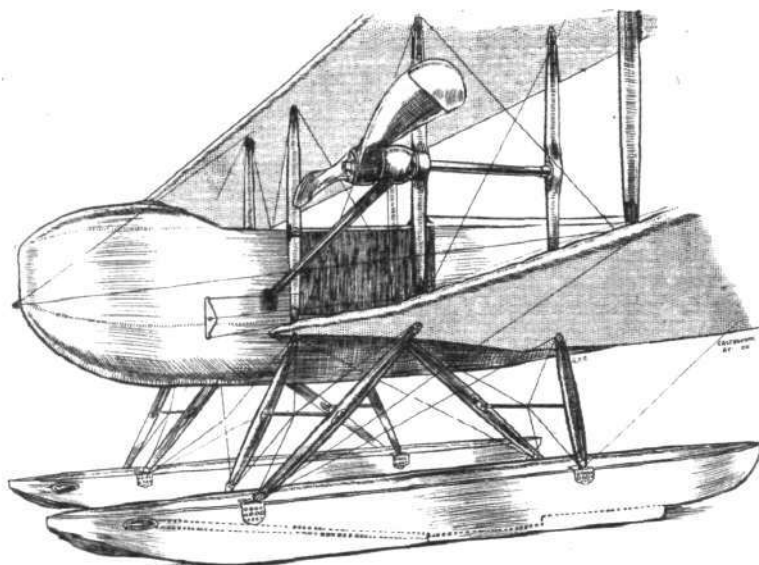
IN FLIGHT for September 4th last, full particulars were published with scale drawings of the Eastbourne Aviation Co.'s Circuit tractor seaplane. This machine, as our readers are aware, embodies several interesting features which, while to some extent to be regarded as innovations, cannot be viewed in any way as experiments, since they are the natural outcome of the experience of its sponsors, Mr. F. B. Fowler and Mr. F. Hucks, and of development.

During a recent visit to the company's works, opportunity was afforded of closely inspecting this seaplane, which is of exceptionally substantial construction.

Special attention has been given in the design to ensure the machine getting off the water even under adverse circumstances. Two factors tend to prevent a machine rising from the water, at all events in a seaway. The first is that as the aeroplane moves over the water, the floats, to some extent, endeavour to follow the natural formation of the surface; with the result that the tail, as it rises and falls, strikes the water and prevents the speed from rising sufficiently to allow the machine to get off. Much can be done to prevent the immersion of the tail by the use of a tail float, or perhaps better still, by using long floats of ample flotation; and it is the latter that are provided on the E.A.C., their length being no less than 19 ft. with a width of 2 ft. But in addition, the body, which is so capacious that three persons can sit comfortably within the cockpit, while another may be stowed at the side of the engine, is upswept to a marked degree, so that it resembles, in some ways, the appearance of a bird. This combination of long floats and upswept tail should enable the machine to be used in comparatively rough seas.

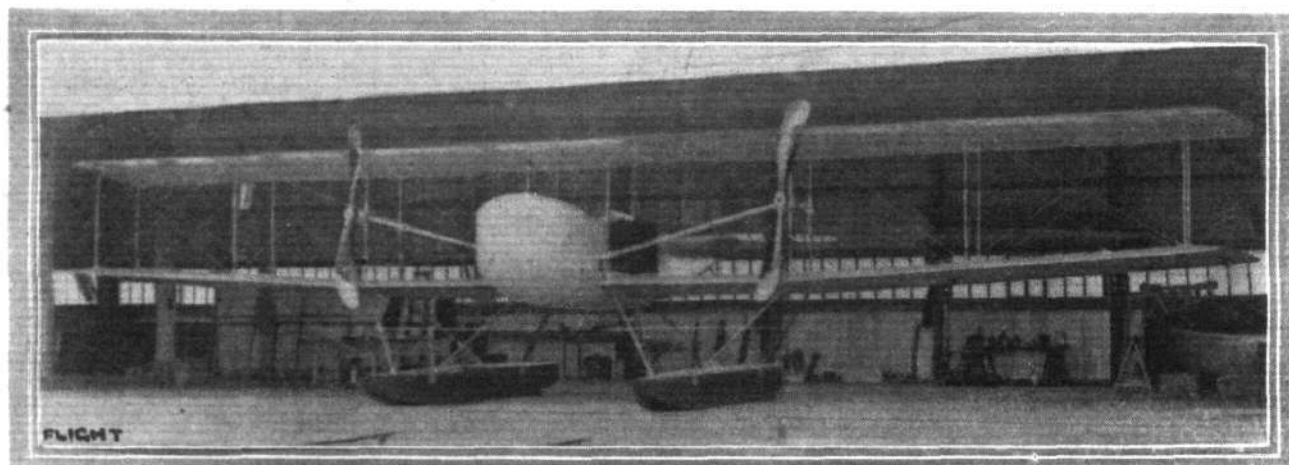
A seaplane is also occasionally prevented from getting away owing to the suction beneath the floats, and a system has therefore been devised to overcome this effect. Each

are continued downwards, as shown in the accompanying sketch, so as to form a skirting, which, quite incidentally, prevents damage to the floats and keeps the machine level when it is standing upon the ground. At the front end of the float, near the upper surface, two pipes are



Sketch showing the general arrangement of the alighting gear on the E.A.C. "Circuit" tractor. Note the air tubes between the front of the float and the steps.

inserted one on each side, which pass through the first athwartship bulkhead and have their other ends open at the commencement of the first step. The ends of these pipes are flanged and rivetted to the body of the float, and a joint is made between the piping and the bulkhead in order to prevent leakage should one compartment be punctured. Thus, as the seaplane travels over the



The Eastbourne Aviation Co.'s 100 h.p. Green-engined 1914 "Circuit" seaplane.

of the floats, which are of particularly strong design, is divided into six compartments by one longitudinal and two athwartship bulkheads. On the under side of the floats are two steps, and the sides of the compartments

The Fate of Earl Annesley and Lieut. Beevor.

It was announced on Tuesday that the relatives of Earl Annesley had been officially informed that the aeroplane, on which he and Lieut. C. F. Beevor, R.N., left England on November 5th to fly to the British lines

surface of the water, air passes in through these pipes, effectively breaking the partial vacuum formed at the steps which tends to prevent the machine from leaving the surface.

in Belgium, was brought down by a German shell near Dixmude and that both occupants were instantly killed. It is stated that the shell apparently struck the petrol tank, for the machine was in flames when it reached the ground.

EDDIES.

ANOTHER postcard from Louis Noel, dated somewhat vaguely L—, November 25th, tells us that things are well with him. In his own peculiar charming style, which is too good to be edited, Noel says:—

"I was at P— two days ago flying from 7 a.m. to 2.30 p.m. The guns made thunders in the valleys, the echo was terrifying and the shells fell like rain. When the first time I have seen the same thing I thought we were in the hell. But now that kind of distraction does not prevent us from giving the range to our guns without trouble. Certainly our progress is very slow, but going on all right. In that hilly country it is very difficult to fly, and we must be very careful not to lose our ways. Plains and hills are alike and make the job a little unpleasant in a foggy day. We have snow since 2 days and it is terribly cold 'upstairs,' otherwise we are all well."

x x x

Noel is much too modest to mention the fact himself, but in a corner of the post card set aside for the address of the sender I find: "Louis Noel (Caporal Aviateur)." Congratulations on the promotion, Noel! May your efforts soon be rewarded with a further step up.

x x x

Several letters have reached us in reply to the query in "Eddies" of last week regarding a suitable ground in the vicinity of London for school purposes. In all cases, however, they merely suggest places which might be suitable, and there is no information as to whether they are available for aviation purposes, either permanently or temporarily. One reader draws attention to two pieces of ground, which adjoin and are approximately 350 acres and 600 acres respectively in extent, and situated within 10 miles of London. Both grounds, which are separated by a road, are practically level, and there are few trees or

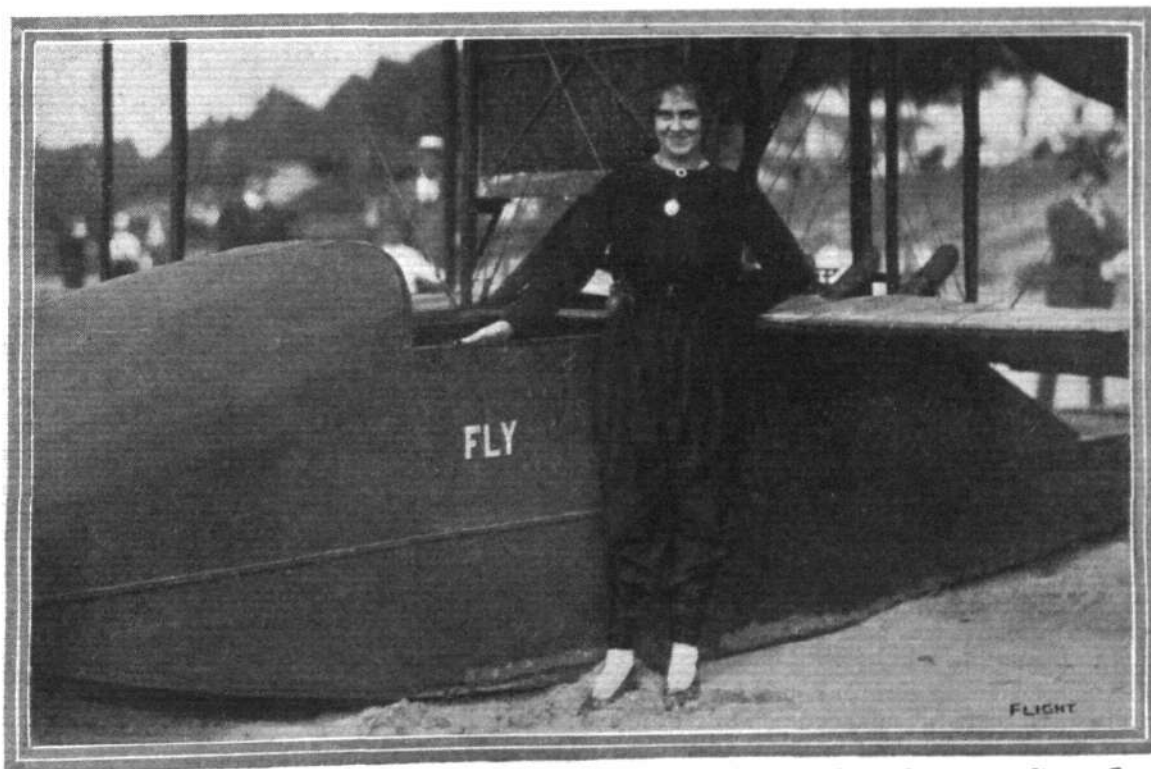
hedges, but each is divided by a small watercourse which could probably be filled in. It is open country (except in a westerly direction) for many miles round, and it has the further advantage of being close to two railway stations on one of the main lines, one being about 1½ miles from the station, whilst the other station is almost adjoining the ground.

x x x

Another correspondent reminds me of the Aerodrome that was "going to be" out Harrow way, and the ground for which may be still available. The prospectus for this Aerodrome was, if my memory serves me rightly, sent out in the early part of 1912, but apparently the scheme never matured, as the matter dropped out of knowledge, at any rate so far as actual activities were concerned. This ground is served by two railways, being in close proximity to Northholt Junction station on the Great Central and Great Western railways. It is surrounded by flat country, mostly grass, and fairly free from trees. A few hedges and other obstacles might have to be removed and some ponds and ditches filled up, but on the whole the ground, if still available, should not be difficult to get into shape.

x x x

A third suggestion is a flat riverside piece of country down east, perhaps 15 miles away. This is of fairly large size, and has the further advantage of being close to a large expanse of water, so that, if desired, tuition could be given on waterplanes as well as land-going machines, and might be had on very reasonable terms. It is within easy reach of London by rail, so that the transportation of raw materials, or even finished machines, from or to any point would be no difficult matter. My correspondent is willing to render any assistance he can, and I shall be pleased to put any readers who may desire to have a look at this ground in touch with him.



Miss Irvine in her professional aviation costume at Avondale, New Jersey, where she is now flying Capt. J. V. Martin's machines.

No doubt many readers of *FLIGHT* will remember Capt. Jas. V. Martin, who did some excellent flying in this country in 1911, when he was attached to the Grahame-White school at Hendon. Capt. Martin later returned to the States, where he has since been scoring both as a pilot and as a successful constructor of aeroplanes of various types. He has now joined forces with the Aero-marine Plane and Motor Co., Avondale, New Jersey, U.S.A., for the construction on a large scale of flying boats and tractors. From accounts to hand, the venture looks like being a great success, an issue which we shall all be glad to herald later on.

x x x

Among the many pupils who benefited from Jas. V. Martin's tuition at Hendon, was Miss Lily Irvine, who, as will be recalled, became Mrs. Martin in the summer of 1911, and later went with her husband across the "pond." Mrs. Martin, or, to preserve her *nom de vol*, Miss Irvine, has still retained all her old enthusiasm for flying, and has to her score a considerable number of successful flights, which in July culminated in a splendid bit of air work—a flight with a passenger of 70 miles

across Lake Erie from Cedar Point to Euclid Beach in 59 minutes.

Starting from Cedar Point at 2.10 p.m. on July 23rd, Miss Irvine, having climbed to a height of 1,200 ft., steered in a north-easterly direction so as to clear the point at Vermilion. Huron was passed at 2.18, so that the first 11 miles were covered in 8 minutes. The rest of the time-table panned out as follows:—Vermilion, 2.30; Lorain, 2.40; Dover Bay, 2.52; Eagle Cliff, 2.53; arrival at Euclid Beach, 3.09. On landing, Miss Irvine received her reward in an enthusiastic and well-deserved welcome, for the flight was one which *any* aviator might well be proud to have to his credit. At the commencement of the flight a rich banker offered to follow her in his fast motor boat so as to be at hand in case of accident, but Miss Irvine was not to be "mothered" thusly, and settled the matter in the following characteristic words, "We'll go it alone or not at all!"

Miss Irvine is now flying her husband's machines, and we shall look forward to recording more of her doings in the future.

"ÆOLUS."



SOME MORE GERMAN ANTI-AIRCRAFT BOMBS.

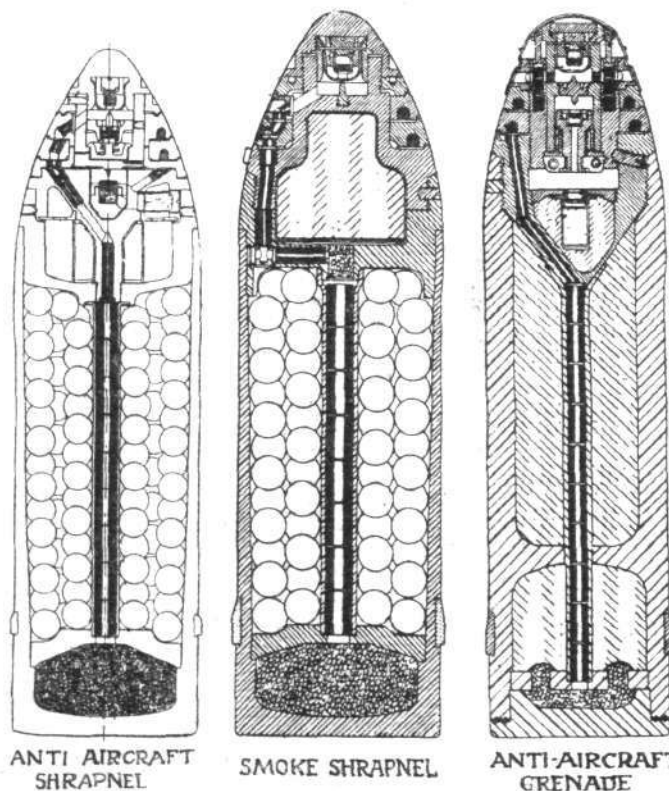
THE Ehrhardt anti-aircraft shrapnel, manufactured by the Rheinischen Metallwaren und Maschinenfabrik, Düsseldorf, only differs from the usual design of projectiles of this type, in that the fuse, the moment it ignites the powder in the axial vent communicating with the base-chamber charge, also ignites a delay fuse which leads direct to the grenade charge.

First, the gases of the base charge drive the bullet filling and with it the grenade portion forwards. Then the latter detonates as soon as the delay fuse acts on the grenade charge. If the grenade portion strikes the aircraft beforehand, it will explode on contact. While the bullets fly forward in a closed cone of from 12° to 14°, the grenade portion hurls its fragments forward with enormous violence under a cone angle of 200°, and for a distance of about 200–300 metres in all directions—forwards, upwards, downwards, and sideways. With this shell one therefore commands a space of about 700 metres length and about 300 metres width. An aircraft will thus not easily be able to escape if the range has been only approximately found. This shell possesses, apart from its great effect, the advantage of easy observation, as both the shrapnel and grenade portions develop clearly visible clouds of smoke. A smoke trail is therefore not necessary, and the space thus saved may be used for increasing the charge of the shell.

The smoke shrapnel on exploding ejects the bullets and simultaneously breaks off the head, which is not, however, filled with an explosive, but with an incendiary charge, which, from the moment of explosion, leaves a trail of smoke that renders its path visible, and, should it hit the mark, ignites the gas of the airship, whilst the object of the bullets is to put the crew *hors de combat*.

The balloon grenade is filled with an explosive charge, behind which is a base-chamber filled with an incendiary charge. This is ignited by means of a fuse in such a manner that it begins to develop a trail of smoke 250 metres before the projectile reaches its intended point of explosion, and continues to do so until a distance of 250 metres behind the point of explosion. If, in the meanwhile, the percussion fuse has not exploded the grenade,

the time fuse will have reached the charge through another passage and brings the grenade to detonation. If this takes place near the aircraft, the fragments will damage this more or less.



GERMAN AIRCRAFT BOMBS.—Three types of anti-aircraft shells manufactured by the Rheinischen Metallwaren und Maschinenfabrik, Düsseldorf.

All three types have the advantage that they come to pieces in the air. There is thus little danger of causing damage to friendly troops, since the pieces are of small size and fall relatively slowly.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Beatty School.—Pupils out receiving instruction during last week with instructors, Mr. Geo. W. Beatty, W. Roche-Kelly, and Edouard Baumann, on dual-controlled 50 h.p. Gnome biplane and 40 h.p. Wright biplane. Pupils receiving instruction being Messrs. Virgillio, C. Leeston-Smith, M. Gardner, J. D. Newberry, and A. A. Fletcher. Owing to the extremely bad weather experienced during the week, only a small amount of training was possible, the wind being exceptionally high. However, with the new 60-70 h.p. machine that is now nearing completion, training will be able to be carried out every day except during the very worst weather.

Hall School.—Owing to terrific gales prevailing during last week no outdoor practice has been permissible. On Sunday, J. Rose and J. L. Hall were out on tractor biplanes 2 and 3 respectively, but the fog prevented anything but short test flights.

London and Provincial Aviation Co.—Instructors for the past week: Messrs. W. T. Warren and M. G. Smiles. Pupils receiving instruction on L. and P. biplanes: Messrs. Moore, Abel, White, England, Derwin, Laidler (new pupil). Weather all week very unfavourable.

Ruffy School.—Pupils receiving instruction: Messrs. Aoyang, Donald, Graham and Marriott. Machines in use: 60 h.p. Gnome-Caudron, dual control, and 45 h.p. Anzani single-seater. Instructors: Herbert James and Howard James.



Mr. W. Roche-Kelly, who obtained his brevet at the Beatty flying school some time ago, and who is now one of the pilots at the school.

(Photo. by F. N. Birkett, Shepherd's Bush, from the "F.N.B." series of aviators.)

CORRESPONDENCE.

"The Industrial Army Badge."

[1891] Your remarks in the Editorial Comment of this week's FLIGHT seem to me to be somewhat unwarranted when you speak of the foolishness of universal service. It is difficult to believe that what Lord Roberts advocated with heart and soul should be the "veriest clap-trap." It may not be presumptuous to consider that Lord Roberts was at heart as good a judge of the nation's requirements as is the writer of the paragraph in question.

One may even suggest that what has been done in France with regard to universal service has not been so extremely foolish as your paper chooses to infer.

The military authorities there have seen to it that the men necessary to provide for the equipment of their army, and for the wants of the nation, are provided in sufficient quantity to effect the desired purpose.

It is the opinion of many who are good judges that had we had universal service in England there would have been no war.

I think you do injustice to the dignity of your paper by printing such remarks as you do about a subject the great majority of qualified military men and a vast number of your fellow-countrymen approve of.

Newtown Grange, Newbury, Berks.
December 6th, 1914.

A. G. WITHERBY.

[We fear that our correspondent has misunderstood our campaign. Like our correspondent, we favour universal service as a principle, but to apply it suddenly and strictly at the present moment when war has been thrust upon us would be, in our opinion, a mistake amounting to a calamity for the nation. Had conscription come to Great Britain, as it should have done, when first advocated by Lord Roberts, all would indeed have been

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War Fund for the Air Services.

FROM the official notices of the Royal Aero Club on p. 1193 it will be noticed that the Club, at the suggestion of the Admiralty and the War Office has agreed to organise and administer a fund for the benefit of officers and especially men who are permanently incapacitated by wounds or injuries received on duty, and for the wives and dependants of those who are killed. The details of

well at this the greatest crisis of the world, as we should have had, not only the army wherewith to fight through to a speedy victory, but should have had the organisation in being which would have automatically excluded all those workers in whose behalf we have proposed the Industrial Army badge, from immediately joining up for the fighting line. Further, under such conditions, all serviceable men being in the same position, there would be no necessity for a distinguishing badge for the Industrial Army worker as distinguished from the slacker, as there is at present. It is inconceivable to think that Mr. Robert Blatchford has not these points well in mind, and for that very reason we still think that we are more than justified in labelling such a proposition coming from him and put forward under existing conditions, as "clap-trap." Incidentally we would point out that we neither said nor suggested "the foolishness of universal service."—ED.]

Re Industrial Admiralty and Army Badge.

[1892] I have been much interested in your suggestion for the above, but think that something is required to indicate that the wearer is engaged in some occupation which is contributing to the defence of the country.

I would suggest that the words "National Industry, 1914," should be added to the badge in a scroll at the bottom, or encircling the designs which the authorities may select, as I presume there will be something to distinguish the workers for the Admiralty and those for the War Office.

The advantage of inserting the year defines the period during which it is intended to apply, and, of course, would be altered as time goes on.

Aerial League of the British Empire,
Windsor House, Kingsway, W.C.
December 7th, 1914.

A. H. VARNIER.

✱ ✱

the scheme are now receiving careful consideration, and further details will be published as soon as possible.

Pource Reported Killed.

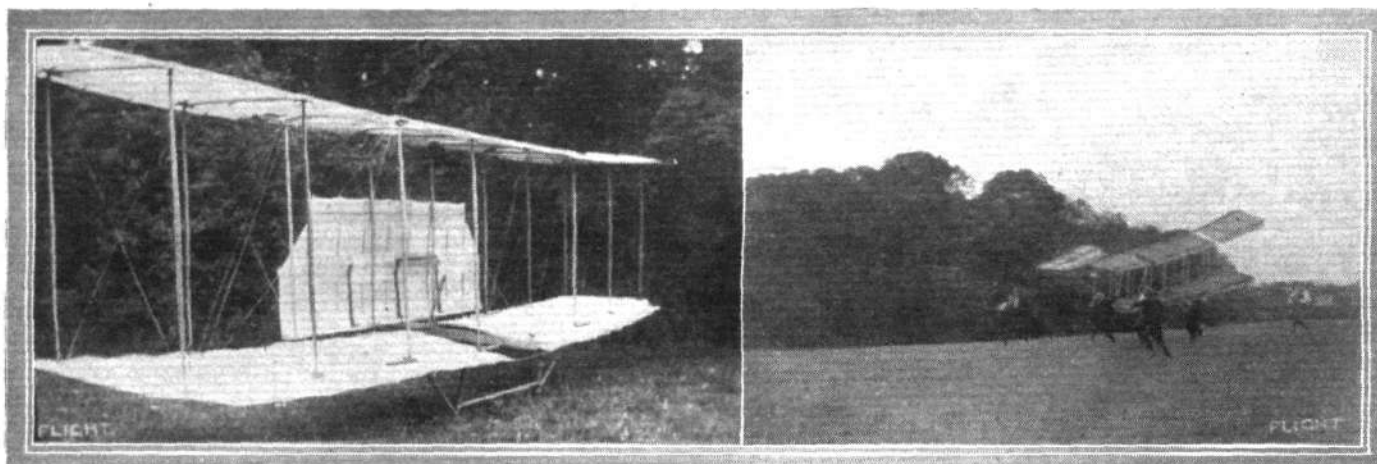
It was reported from Paris on the 3rd inst. that Marc Pource was killed on the previous day as the result of an accident while making a reconnaissance in the Somme district, and that a military observer who was accompanying him was also killed.

THE RYLEY GLIDER.

By **LESLIE G. RYLEY** (Coventry Aero Club).

"**DRAGON-FLY I**" made its *début* on Saturday, August 21st. Before describing the gliding capabilities of the machine the method of transport will perhaps be of interest to town readers who contemplate building a portable biplane glider in a "microscopic hangar." Rising at 6 a.m. we found the weather was very misty but by the time the various parts had been collected on to the writer's lawn—which had previously been cut and rolled to facilitate erection—the fog cleared sufficiently to enable us to start work. By 8.30 the various extensions were held in position by temporary wires, then came

excellent towed flights were made both with and without a pilot, the wind being about 10 m.p.h., but owing to the field being rather small we were almost into the hedge before the machine lifted the writer, whose weight is over 10 stone. The latter's brother, a youngster of 7 years, had three excellent "joy rides" of about 80 yards in length, much to his enjoyment. Mr. Shorter, who, it will be remembered, recently constructed a cycloplane, made a good glide while lying down on the bottom plane. The only smash occurred when the above pilot was running in the plane, *i.e.*, between the front and rear spars. This



Mr. L. G. Ryley's glider, of which a description appeared in **FLIGHT** of November 6th. On the left is seen the glider at rest, where it will be noticed how the elevator and its outrigger are clipped along the planes in order to facilitate transport. On the right the "**Dragon-fly**" is just getting off. Mr. Ryley can be seen in the rear actuating the elevator by ropes.

an interval. Three hours afterwards, the whole of the main planes were braced up, which, considering the number of struts and the fact that all the wires had to be cut off to length, as well as making some extra clips, was not a bad start. The elevator and its outrigger were then clipped along the planes as shown in the photograph. The next item on the programme was to get the glider out of the garden, which obstacle was surmounted by lifting the machine bodily over a 6-foot hedge. Four cycles were commandeered, and with the skids resting on the saddles we pushed the whole arrangement "end-on" up to the ground, where it was only necessary to push the outrigger into its sockets and connect up the elevator together with its wires. With regard to the flying some

method was suggest by Mr. T. W. K. Clarke some years ago. Mr. Shorter not having much "leg-room" was hardly fast enough for the towers, and consequently when the machine lifted he jumped on to the trailing instead of the leading edge. The machine rose and landed "edge-on" with its elevator vertical. The pilot being unable to get out owing to the rear spar and diagonal wires dropped on a stanchion and broke it. This was the only damage sustained, although the machine landed rather heavily on several occasions—the low-built chassis holding up to the strain in an excellent manner, while the bottom plane and elevator had a good "cushioning" effect on the machine by compressing the air between themselves and the ground.

ENEMY PATENTS RELATING TO AERONAUTICS.

LIST of British patents which have been granted in favour of residents of Germany, Austria, or Hungary, specially compiled for **FLIGHT**, by Lewis Wm. Goold, Chartered Patent Agent, Enrolled Patent Attorney in the United States, 5, Corporation Street, Birmingham, who will supply full copies of any of the patents, price 8d. each, and from whom the latest particulars upon the Register of Patents can be obtained.

Furnished in view of the new Patents Acts, which empower the Board of Trade to confer upon British subjects the right to manufacture under enemy patents.

No. 7520/11. Starting. A starting-device of the kind in which a piston-rod engaging the ground is driven out of a fixed cylinder by means of compressed gas generated for example by the explosion of gunpowder. Rheinischen Metallwaaren- und Maschinenfabrik, Germany.

No. 9155/11. Shelters for air-ships. Air-ship garages of cylindrical form are provided with sectional roofs which are circumferentially movable so as to afford free access from the entrance. Krumholz, A., Germany.

No. 10001/11. Balancing, planes, arrangement of, parachutes.

Supporting-planes provided with keel planes are pivoted freely about axes, the inclination of which may be varied, so that when the axes are not vertical, the pivotal movement of the planes causes a variation of the angle they make with the horizontal. The construction may be so arranged that any increase in the force of the wind would produce a corresponding decrease in the inclination of the supporting-planes. Raabe, M., Germany.

No. 12542/11. Aerial machines, without aerostats; parachutes; propelling. An aerial machine adapted for observation purposes is raised by a propeller driven by a motor arranged on the floor of the car, the propeller rotating above a funnel-shaped cylinder which is surrounded by a permanently open parachute. Steering:—By displacing the centre of gravity the machine is caused to ascend laterally. Ostermal, C., Germany.

No. 14334/11. Aerostats. Balloon envelopes which contain rubber are provided with a colour coating impervious to the ultra-violet rays of light, and with a metal coating. If the balloon envelope comprises two layers of material, one of these may be coloured and the other metal-coated. Kirchner, W., Germany. Dated January 25th, 1911.

AIRCRAFT AND THE WAR.

THE following interesting details of the life of M.F. 123, a Maurice Farman biplane, were recently given in the *Petit Parisien*. The machine was built at Buc last summer and delivered to the French army at Nancy on July 16th, and it has recently been returned to Paris for rebuilding. The flying done by the machine was:—

"Before mobilisation, 6 hours 40 minutes.

"From mobilisation to the declaration of war, 3 hours 40 minutes.

"From the declaration of war until August 31st, 58 hours 5 minutes.

"In September, 53 hours 15 minutes.

"In October, 50 hours 45 minutes.

"From November 1st to 5th, 14 hours.

"In all 186 hours 25 minutes, during which a distance of about 11,000 miles was covered.

"During its period of active service the biplane received 180 shot holes in the wings, and there were marks of 60 shell-bursts, without including 25 broken wires, two broken propellers and seven holes in the hood.

"One explosive shell, fired by a three-seater Aviatik, pierced the right side, passed within a few inches of the petrol tank, and went out again by the left after rebounding off the steel plate protection. The ball then burst on a bolt, and a rain of fragments tore the two wings of the lower central plane.

"Two rifle bullets shot almost vertically pierced the right side of the hood and became embedded in it. Another fired from a trench over which the biplane was passing at a height of 300 yards glanced off a bolt and passed within a few inches of the pilots' head in front of the seat of the observer. A shrapnel ball grazed the back of the pilot and pierced the writing tablet of the observer.

"The M.F. 123 was right over a captive German balloon, upon which it was about to drop a bomb, when it was finally hit in 47 places by shrapnel bullets, one of which passed through the little opening in the armour of the machine through which the observer looks when he drops a bomb. It was then forced to descend in its own lines, where it was found that the propeller had a hole in it as big as a fist."

In an interesting pen picture of the Kaiser's headquarters in Belgium, an American correspondent of the *Chicago Herald* said:—

"Two aeroplane guns are mounted on the hills across the river at a point immediately opposite the Kaiser's residence, while near them a picked squad of sharpshooters are on the watch night and day for hostile fliers."

One of the foremost French pilots, interviewed by a representative of the *Echo de Paris*, gave the following details as to the dangers of flying over the enemy's lines:—

"Generally speaking, when we fly over the enemy's line we run fewer risks than a sharpshooter who leaves his trenches. However, our job has become somewhat more dangerous during the last weeks, for the Germans, whether it be that their shooting has improved or that they now possess a new aeroplane gun, are firing shrapnel which bursts at a height of 2,300 metres. In the early days their shells were ineffective beyond 1,800 metres. Now, at 2,300 metres we are too high to see clearly, so if we want to bring any useful information to our chiefs we must descend into the zone of fire. Even then our risks do not appear to be very serious, for a day or two ago I found on landing that my machine had been struck by no fewer than fifteen projectiles, but neither I nor my observer were a penny the worse for it."

In a despatch, received in London last week, dealing with an attack on Missy on November 26th, a *Times* correspondent said:—

"According to the detailed accounts now available, it would appear that French airmen brought news of a great movement of German troops which were advancing from Anizy-le-Cateau and the banks of the Oise and Aisne canal towards this latter river."

"The action began at midday with a sharp cannonade, during which two Taubes flew over the Allied position. The German guns, however, failed to find their range accurately, and caused very few casualties, although they set fire to the church of Missy and destroyed a number of houses. On the other hand, the French fire was extremely accurate, and flames were soon seen to arise from the woods of Sancy, where the enemy's guns were posted."

According to a message from the Hague on the 3rd inst., it was rumoured in Berlin that an enemy aviator had flown over the Krupp works at Essen and dropped bombs on the cannon hall. The following day the *Frankfurter Zeitung* stated that it was authorised to declare that no British aviator had attempted to drop bombs on the Krupp factory at Essen.

A telegram to the *Daily Mail* from Warsaw on December 3rd stated:—

"German aeroplanes, dropping bombs as usual on the civilian population are again beginning to appear over Warsaw. A bomb thrown on the Jerusalem alley wounded five persons, two of whom died and a third had to have his leg amputated. A second bomb fell on the roof of a house in the Vidok street, but fortunately caused no damage. The first bomb exploded just in front of the building occupied by the American Consulate, and smashed all the front windows to pieces."

A *Times* correspondent, in a message from Cairo on December 3rd, said:—

"According to an official statement, British aeroplanes have made constant flights lately over the Sinai Peninsula. No sign of the enemy has been observed."

According to the *Echo Belge*, the Zeppelin shed near Brussels has been completed, and an airship has taken up its abode there.

In a message from Amsterdam on December 4th, a *Morning Post* correspondent said:—

"Notwithstanding German denials I am able to confirm reports in England that heavy damage was caused to the Zeppelin works at Friedrichshafen as the result of the raid by British aviators. One bomb fell on the roof of an airship shed, which was seriously damaged, whilst the frame of an airship contained in it was completely destroyed. Outbreaks of fire occurred at various points owing to gas explosions caused by other bombs, and several workmen were badly burned. During the attack consternation prevailed in the factories."

Writing from Paris on December 4th, a *Daily Call* correspondent said:—

"Care has been taken to reckon up the German aerial losses as near as possible, and it is believed it is correct to say that the enemy has lost seven Zeppelins since the war began, and 52 aeroplanes, with 86 officers and men. Inquires prosecuted tend to show that at the present time the Germans do not possess more than 26 airships and 287 aeroplanes all told. They are also short of competent pilots, although the Johannisthal school of flying is working hard training new men."

"One branch of the aerial service in which the enemy has made undoubted progress since the war started is in the matter of anti-aircraft tactics. At the outset the Germans had no gun that could catch the aeroplanes at higher than 5,000 ft. or so, but now they have guns that "get" an airman easily at 8,000 ft., and they have become quite expert at using it also. This obliges the Allied airmen to run greater risks, for 8,000 ft. is too high for proper scouting and useful observation. It is curious, though, how lucky the men are, for while three times out of four whenever they get into a hot place their machine gets holed all over they continue to get off very lightly."

On December 4th, the following particulars were published in Paris regarding the recent work of the French airships:—

"Some three weeks ago the Germans accumulated at Tergnier, north of Soissons, one of the most important strategic points on the Northern Railway system, a large number of locomotives and wagons for use in the transport of their stores. In the middle of the night a French dirigible flew over the station, halted, descended to a low altitude, and dropped on the engine-shed several bombs, which destroyed the greater part of this material. Other bombs blew up the permanent way, and others destroyed the viaduct connecting Tergnier with the railway lines leading eastwards."

"A few days later the official communiqué announced that the cannonade was less violent in the region of Poye and Lassigny. This was the fruit of the French airship's trip, which had stopped the re-provisioning of the Prussian batteries."

"On another occasion a dirigible during a cruise observed an important depôt of ammunition and foodstuffs far in the rear of the German lines. A few well-placed bombs and the depôt was annihilated. Similar exploits have been accomplished at many spots within the occupied territory."

In a despatch to the *Daily Mail* describing the fighting in the neighbourhood of Lille, Mr. W. Beach Thomas said:—

"One air fight took place some while ago which deserves record. The first airship—not technically a Zeppelin, though it was called so—came over the British lines. It had a minimum crew and a very large amount of explosive. Three aeroplanes went to attack it. The fight was important as a test battle between the two sorts of craft. It is claimed for the Zeppelin that the great height at which it can travel—8,000 ft. is about the practical maximum—the length of time it can remain in the air—the longest journey is just under 1,000 miles—the amount of explosive it can carry—a burden up to five tons—make it the master ship, the Dreadnought of the air. The contention may be true, and one case proves nothing. But the bigger craft is both slow and as a target big. In this particular case the ship and the planes played the game of the heron and the hawk, and the aeroplane hawks travelled so much faster that they won the superior altitude without trouble. Finally, a bullet took effect and the ship crumpled up. One of the observers declared that he and his companions could distinctly see against the sky the atmospheric effect of the escaping gas! However that may be, the ship was destroyed. No more have since been seen, except a small captive ship that is more properly called a balloon."

In a subsequent message Mr. Thomas said:—

"Throughout this fighting the German airmen have faced almost impossible weather. Two of their men, at any rate, have been undeterred by appalling winds and rains, and when the Germans have flown the Allies have flown, regarding the challenge as imperative. It is a pity that such daring of the finest sort should be associated with a form of attack which is near cowardice. Again and again Sunday has been selected for special bouts of bomb-dropping, and to-day a very destructive bomb, serving no tactical purpose, was dropped from a Taube on to Hazebrouck. Sixteen civilians, many of them children, were killed and wounded."

In a message from Warsaw, dated December 5th, to the *Daily Chronicle*, Mr. Perceval Gibbon, in describing the German attacks on Lodz on December 1st, 2nd and 3rd, said:—

"The fire was chiefly directed on the railway and station, and the Russian guns were unable for some time to locate it. The battery was discovered and reconnoitred at last by aeroplane."

"Around Lowicz there is a large community of Germans who are spoken of as colonists. These have been furnishing the invaders with a ready organised spy service, and numbers of them have already been detected and hanged. An instance of their activity occurred on December 1st, when a council of war decided on a withdrawal from Lodz. The order was cancelled next day, but meanwhile the transport supply had commenced to move. German aeroplanes perceived this movement, but the Germans already knew of the order to retire from the spies; but they did not know of its cancellation."

Writing from "Before Verdun" on December 5th, a *Times* correspondent said:—

"No single shell has fallen upon the town save from aeroplanes, and the cooks of the military club are so skilled in the preparation of sewer rats that personally I experienced no queasiness in devouring the following siege menu there."

"Suddenly with a soaring roar over the woods in the foreground four shells from the battery near which we stood sped out towards the hidden Germans. It all seemed very aimless until General S—, pointing overhead, explained this sudden activity. An aeroplane working with this battery had transmitted by wireless the result of its reconnaissance."

It was officially announced in Paris on Sunday that French aviators had thrown bombs on the aeroplane sheds at Freiburg, in Bresgau.

A *Daily Mail* correspondent, writing from Copenhagen on Sunday, said:—

"Great excitement has been caused in Germany by a daring aerial raid to Freiburg. Four bombs were dropped on the railway junction, and are said to have caused much damage at a very important point."

"The flying machines were visible some time before the attack, but attracted no special attention, as it was not thought that the

machines, which were flying quite low, belonged to the Allies. The flying machines were also seen for a moment from Carlsruhe, but there also they only attracted slight notice. It is reported that the flying machines returned safe to France."

In Sunday's issue of the Rotterdam paper *Vaderland* a special correspondent, in an article dated Huy, Belgium, December 4th, stated that twelve Zeppelins had that day passed in the direction of the French frontier at Givet.

A correspondent of the *Daily Mail* telegraphed on Sunday from Copenhagen:—

"The Kaiser's unexpected return to Berlin from the eastern front of the war has caused popular disappointment, for it was hoped that he would return only at the head of his victorious troops. His return is said to have been caused by the uneasiness he felt regarding the Russian aeroplanes. Wherever the Kaiser went the Russian airmen followed him in a most obtrusive manner."

Writing to the *Daily Express* on Sunday from the Belgian Frontier, Mr. Percival Phillips said:—

"The uneasiness caused to the German troops by the systematic daily surveillance of Flanders by the Allies' aeroplanes particularly impressed my informant, who left Belgium on Friday. Fleets of armoured cars carrying special anti-aircraft guns have been brought into the area of the right wing during the past fortnight, and have been based on Bruges, Roulers, Thielt, Thourout, and Courtrai. Apparently the German theory is that this concentration in a comparatively small area will enable the motorists to pursue the hostile aircraft, which fly low for the purpose of securing details of the movements of screened troops and guns. The sentry posts have also been linked up by field telephones. These posts, which cover the entire territory behind the present right wing, enable observers, equipped with powerful binoculars, to detect the approach of airmen and telephone to the nearest motor car base, where crews are constantly ready to dash in any direction on the alarm being given. In this way many futile attacks have been made on the air-scouts of the Allies, but there is no record of any of their machines having been brought down."

"On the other hand, the airmen have several times successfully engaged the enemy. One such battle, the details of which were related to me yesterday by a competent observer, must have presented one of the most thrilling episodes of the western campaign."

"This conflict occurred near the village of Zedelghem, half way between Bruges and Thourout, when one of the Allies' biplanes, armed with a quickfiring, put the crew of a powerful armoured car out of action. The aeroplane, which came from the direction of a coast town behind the Allies' extreme left, was not observed during its earlier progress over the enemy's lines owing to its great altitude, but on nearing the Ostend-Thourout railway line the biplane dropped lower, apparently to enable the observer to examine the new German trenches. The sentries telephoned to Thourout giving the direction of the aircraft as towards Bruges, and an armoured car immediately darted northward along the Bruges road. The aviators discerned a tract of apparently deserted land where there were no troops, and in an open space beside the wooded tract between Snelleghem and Zedelghem dropped lower and lower."

"The peasants thought the pilot was about to land, and perhaps he did so intend. At this moment the car, swerving to the left from the main Bruges road towards Zedelghem, saw the aeroplane planing down just above the roof of a farmhouse. The driver swung the car round violently in his excitement and caused it to skid. The gun crew were badly shaken and the car was nearly overturned and so delayed in getting into action. The biplane came deliberately towards the car. The gun crew tried to get into cover underneath the vehicle, but the lieutenant in charge ran to shelter in a building less than fifteen yards distant, just as the aeroplane's Maxim began firing."

"This lieutenant and another man were killed and two others wounded. The remainder of the motor crew fired a number of shots, but the biplane, which, according to the evidence of the Germans themselves, was handled with superb skill in an adverse wind, lifted and disappeared in the direction of Nieupoort."

"Following this episode, the number of aerial guns around Bruges, Thielt and Roulers was increased. The enemy's airmen now take a far less active part in the operations than those of their opponents. While they are good scouts, the majority, according to definite statements made to me by one of the neutrals already quoted above, are not keen to engage in aerial duels. They will make daring voyages, but their enthusiasm has visibly been dampened by the eagerness of the Allies' airmen to have a good fight on every possible occasion, pursuing and attacking with the deliberate vindictiveness of a hawk after a chicken."

A correspondent of the *Daily Telegraph* at Petrograd sent the following on Monday :—

"A curious story of the Emperor William's youngest son, Prince Joachim, being walled away from capture in an aeroplane is told in the *Courier* by a wounded Russian lieutenant, who has arrived here from the front. This officer relates that at the battle at —, on November 24th, the Prince was in command of the Germans.

"It appeared that when the Prince heard of the unfavourable issue of the battle he jumped on to his horse and, wrapping a coat round his head to conceal his identity, galloped off after the retiring troops. At this juncture three aeroplanes were circling round above —, and, as afterwards became clear, their purpose was to discover the whereabouts of the Prince and rescue him from danger.

"Two aviators who attempted to descend near him came into the fire of the Russian artillery and their machines were disabled. By this time the Prince was with a considerable number of German troops who were completely surrounded by the Russians, and his position seemed to be very critical. Just in the nick of time, however, the third aeroplane came down near him, and taking the seat of one of the aviators, the Prince was borne away into safety."

In a despatch to the *Daily Mail* from "North-East France" on Monday, Mr. John Prioleau gave the following description of an exciting incident :—

"A British biplane left our lines and circled high over the enemy's position. The instant it appeared every weapon was emptied at it. For a few minutes the uproar was deafening. Despite the fact that the aeroplane was almost out of range and that the chances of its being touched were practically nil, the entire trenches gave themselves up to an hysterical fusillade and filled the sky with lead. The aeroplane soared complacently over the eruption and kept all eyes on itself. And that was our chance. While every German head was turned and every neck craned to see the aeroplane outcrept the little brown men, the lithe, grinning Gurkhas, who have struck such terror into the German hosts. The distance between the lines was short, and before the sky-gazers had realised it a chuckling dusky wave of eel-like bodies was on them—on them, through them, and driving them out neatly and expeditiously. They do these things very dexterously.

"The Indian troops have been the innocent cause of much solicitude on the part of the German Staff, who are taking a more than fatherly interest in them. A bold attempt was made the other day to wean them from their loyal allegiance to their Emperor. A new military biplane appeared high up over their trenches, flying slowly. It was out of range, and so no shots were fired. It flew on and over the Indians, went on a mile or two, and, sweeping round, flew back. Just before it reached the rear lines it began to drop, and it was seen that the engine had stopped. To the amazement of our men it planed rapidly down and came to earth in our lines. The machine was captured and the pilot and his observer taken prisoners. A leaking petrol tank had been their undoing. Then it was found that the hull was loaded with pamphlets and leaflets bearing the most fervid admonitions to the Indians printed in excellent Hindustani."

A despatch from a *Times* correspondent in Northern France on Monday, in describing a German attack in the neighbourhood of Dixmude said :—

"The enemy's aeroplanes had been unable for some days to do any effective reconnaissance, so that German knowledge as to the disposition of our troops was almost entirely conjectural."

The Swiss correspondent of the *Morning Post* at Berné reported on December 7th :—

"The Bavarian Press reports that Major-General von Meyer, while entering a motor car, was killed by an arrow shot by a hostile aviator."

"A message from Friedrichshafen says that Commander Briggs is now quite recovered from his face wounds, and has left the hospital and been taken as a prisoner of war to the Bavarian fortress of Ingolstadt."

Writing to the *Daily Chronicle* from Dunkirk on December 7th, Mr. L. A. Jones said :—

"Twenty-four civilians were killed at mid-day yesterday at Hazebrück by two German aeroplanes, which dropped bombs on the town. An eye witness of the affair, who arrived in Dunkirk shortly afterwards, gives me the following account :—

"Just before 12 o'clock two German 'Taubes' or the latest type appeared over the town. They dropped 17 bombs altogether. The first fell harmlessly in a ploughed field outside the town; the other 16 fell in the town itself. Twenty-four civilians were killed. The victims included an old woman of seventy and three children.

The latter were playing in the street when they were hit, and their bodies were terribly mangled. The death of one English soldier was caused in an extraordinary manner. A bomb fell in the square but did not explode. The soldier came out to examine it, when two others fell near him. So great was the force of the explosion that his body was hurled through the thick plate glass of a shop window.

"Two British aeroplanes immediately ascended and pursued the marauders, but the latter, owing to their superior speed, succeeded in escaping."

Among the items sent out by the German wireless at Berlin on December 8th, was the following :—

"The report that near Ypres the French captured a whole corps of German aviators is officially declared to be absolutely unfounded."

A *Daily Telegraph* correspondent wired from Boulogne on Tuesday :—

"Yesterday afternoon a German Taube flew over the towns of Bar-le-Duc and Hazebrück. At the latter town the aviator threw several bombs, killing a soldier and injuring fifteen people.

"Forced to turn back at Bar-le-Duc, owing to a fierce rain of shell, the aviator reached the Argonne district. When near Chaumont-sur-Aire a shell from a French 'seventy-five' struck the machine, which was instantly in flames. When the remains were searched later, there were found five pointed German helmets.

"The President had been in the town the day before, and had left suddenly in the evening."

Writing to the *Daily Mail* from Rotterdam on Tuesday, Mr. James Dunn said :—

"The Germans have built aeroplane sheds, to the south of Bier Beek. On Sunday morning a bugle warning signalled that there was a French warplane flying in the direction of the shed. The Germans opened fire and a German airman started in pursuit in a powerful Taube armed with a Maxim. The Frenchman, showing great skill, climbed to a considerable height and, avoiding the torrent of lead, took advantage of the wind and disappeared. The same warplane earlier in the day dropped bombs near Feluy, Hainault, and destroyed three railway wagons filled with ammunition."

According to news from Turnhout, a French aviator attacked the petroleum and ammunition stores at Feluy, which are strongly guarded. The Germans opened fire forcing the pilot to ascend higher. A German machine ascended, but the French aeroplane escaped after dropping a bomb, which blew up three trucks of an ammunition train.

In his description of the French lines round Verdun, Mr. G. H. Perris of the *Daily Chronicle* wrote on Wednesday :—

"On the way we visited several French batteries, one of which, receiving a message from either an aeroplane that soared ahead or a big yellow captive balloon that floated above a camp of white tents, began to bombard a German position."

A *Daily Telegraph* correspondent reported from Copenhagen on Tuesday :—

"Mines have been washed ashore at Fanø from a German seaplane wrecked outside Nordby. Danish officers have now saved the seaplane, and seized it.

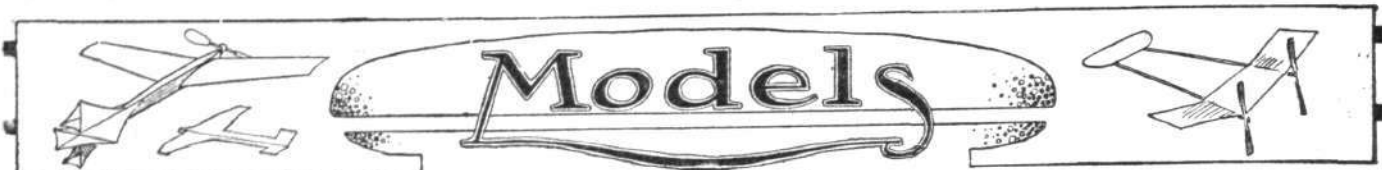
"They state that although it has been ten days in the water, the motor is only slightly damaged."

It was officially announced in Petrograd on Tuesday that the cruiser "Breslau" appeared off Sevastopol yesterday morning, but disappeared on being attacked by Russian cruisers and aeroplanes.

In a *communiqué* issued by the German Army Headquarters on December 9th, there was the following :—

"We had to destroy by fire a farm west of Rheims, though it was flying the Red Cross flag. Photographs taken by our airmen showed that the French were using the place as a shelter for their heavy artillery."

It is reported from The Hague that the two German flying officers who recently broke their parole and escaped from internment in Holland have been reprimanded, and will return to Holland to place themselves at the disposal of the military authorities.



Edited by V. E. JOHNSON, M.A.

Models Driven by Compressed Air.

(Continued from page 1184).

As well as the various experiments already detailed, some were also made with respect to leakage. Even with 120 lbs. pressure this was found to be very slight, occurring mainly at the tap, which (as already stated) was of the ordinary cone shape pattern, and turned quite freely. In any tap suitable provision should always

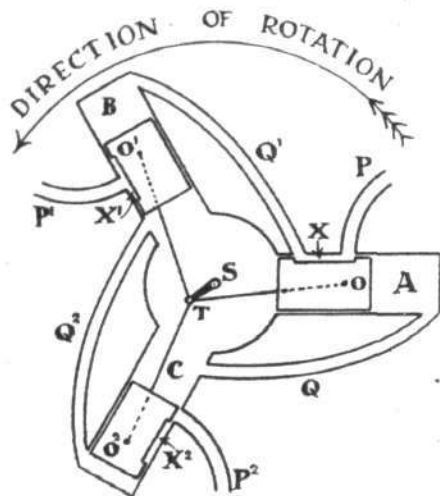


FIG 1

Fig. 1.—Three-cylinder compressed air motor. The pistons are hollow.

be made for properly tightening up the same, as in small power plants (unless a properly fitted needle valve tap be used) this is the most common source of leakage.

How the Three-Cylinder Motor Works.

The motor consists of three single acting cylinders, arranged symmetrically round a circle, *i.e.*, the axis of each cylinder making an angle of 120° with the other two. There are no separate valve chests, slide, rotary or otherwise, for each cylinder is made to act as the slide valve to the cylinder next following it in order of rotation. Thus if the motor be supposed rotating anti-clockwise as shown in the sketch, the pipes or tubes, P, P', P'' are all connected with the main air supply, and are *always* full of compressed air whilst the motor is working. The tubes Q, Q', Q'', which connect the forward part of each cylinder with the rear or closed portion of the next succeeding cylinder, act *both* as supply and exhaust pipes, supply by means of the grooves or slots or some such arrangement, X, X' and X'' in the three pistons, O, O', O''. In the sketch the piston O' is being driven forward; it is approaching the end of its stroke; O has already reached it. As soon as O' has advanced a little further, O recedes and shuts off supply, but O' now begins to supply O'', and that travels forwards. O' after a brief stationary period begins to move back. The cylinder A has exhausted through Q. When the pistons travel towards the back or the cylinders it is evident they must not uncover any of the tubes, P, P', P''—*i.e.*, they must be sufficiently long, and the tubes, P and Q', &c., must be nearly enough together for this not to happen; nor must the piston travel forward too far, so as to allow air from P, P' and P'' to get into the closed end of the cylinders. The sketch is merely intended to explain the principle, and must not be taken as a scale drawing. S is the axis of rotation, and ST the throw in this case; ST is about $\frac{1}{8}$ of an inch, so the travel of the pistons backwards and forwards is $\frac{1}{4}$ of an inch. To work efficiently like any other type of engine, it is evident the little motor must be well made, especially the fitting of piston and cylinder. The reason why the motor must not be worked at a lower external temperature than about 55° , is that ice particles may form on the inner walls of the cylinder, and, in consequence, have an injurious effect on the fit of piston and cylinder. Paraffin should be used as a lubricant. Obviously this type of motor can be built in a very light form; it is also symmetrical, and lends itself for attachment to the cylindrical reservoir; it is also powerful, more powerful than an

ordinary double-acting slide valve motor of same sized cylinder, &c., because in this case we have three impulses per revolution instead of two, but it uses more steam or compressed air as the case may be, and supposing we made our double-acting slide valve motor of slightly larger bore, &c., so as to make it the equal of the three-cylinder one, this could, I think, undoubtedly be made the lighter of the two. The three-cylinder one is, however, self-starting, which is an advantage. Model aeroplanes have now been made to fly successfully with many types of motors, and could no doubt be made to do so with practically any type of engine, if built light enough and at the same time of sufficient strength and accuracy to avoid loss by leakage. We should like to hear from various readers of any types of engines with which they have obtained successful results.

The Question of Heating the Air.

This question was already referred to in last week's issue. For laboratory experiments any efficient type of heating can be employed. The engine or motor should be mounted at a little distance from the motor with a coil of copper (for a commencement) tubing interposed between connecting reservoir and motor. The writer intends if possible to carry out some experiments of this character during the next fortnight. Inject into the reservoir say 50 or 100 pump strokes, time the run of the motor, &c., with the coil unheated. Next pump the same quantity of air (using a pressure gauge if possible) into the reservoir and heat the air—if you possess the means to measure the temperature so much the better; and again, note the length of run, &c.

When, however, it comes to the question of the model in free flight, there only appears to me to be one satisfactory method of heating and that is by means of a small blow-lamp: not altogether owing to the higher temperature which such a flame gives, but also on account of the great difficulty of keeping any other flame alight under the circumstances, but we shall be glad to receive any suggestions from our readers on this score. With regard to the question of keeping the flame alight, all boxed-in arrangement must be avoided as much as possible, both on account of

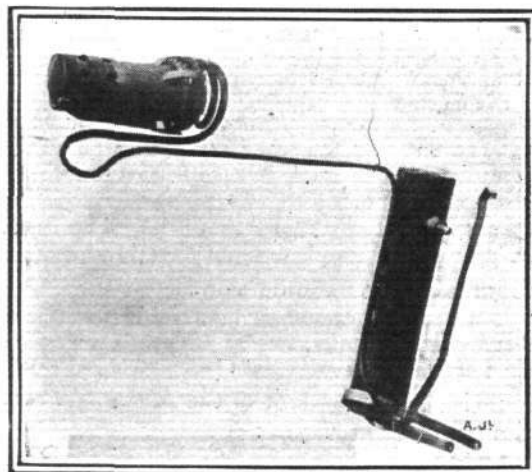


Fig. 2.—Powerful blow-lamp and reservoir by Mr. H. H. Groves.

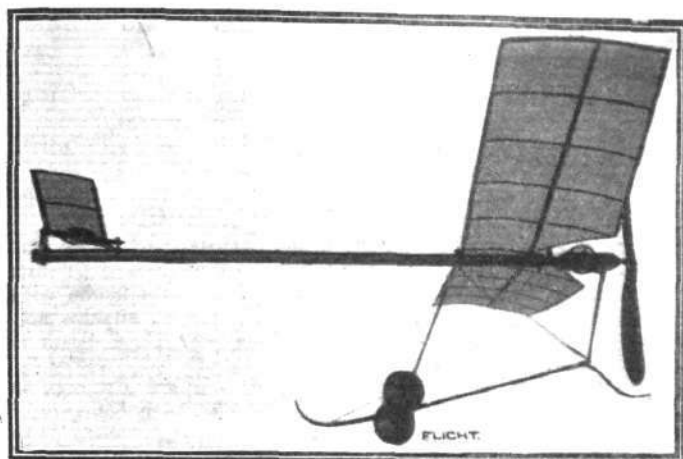
extra weight and air resistance which they give rise to. The use of blow-lamp *possibly* entails the employment of steel instead of copper tubing and a brazed or at any rate silver soldered motor; on the other hand, the quick expansion of the highly compressed air entails a heavy fall of temperature, and the resultant temperature might not be too high for a soft soldered engine, provided only a small blow-lamp was used. There is no doubt, however, which is best. Blow-lamps can be made very light. The one shown in Fig. 2 was made for the writer quite a good time ago by Mr. H. H. Groves. Its weight (complete but empty) is 4 ozs. only. Now nothing like such a large lamp is needed for a small plant; one weighing not more than $1\frac{1}{2}$ ozs. would be ample to try experiments with, carrying, say, $\frac{1}{2}$ oz. of benzoline; moreover, a commencement might be made with a much simpler type.

(To be continued.)

We have received the following from Mr. H. A. Lyche, hon. model sec. K. and M.A.A. We still hope that this competition will not fall through:—

"Regarding Wind Tunnel Experiments."

"With reference to a paragraph which appeared in your last week but one's issue, I would like to point out that it looks as if we shall have to abandon the Laboratory Competition altogether this year, as Mr. Cooper, who undertook to hold the competition, for unavoidable reasons is unable to arrange matters. It is further pointed out to us that the Aeronautical Society is unable to give the prizes as stated in our programme. Should, however, any competition be possible, all particulars will be published in good time."



Mr. W. H. Akehurst's Olympia model.

Reply to Query, p. 1148.

By CLEMENT J. GANDY.

In reply to your correspondent, who asks for the size of propeller and lifting power of a model of 10 ft. span, I should like to suggest a method by which such a question might be answered.

The method I refer to is by the use of the following well-known formulae used for estimating the power and speed of steamships.

- (1) Let $\frac{L}{L_1} = r$, where L and L_1 are the lengths (or linear dimensions) of some chosen full size aeroplane and the model it is desired to construct respectively.

Then

- (2) $\frac{A}{A_1} \propto r^2$ where A and A_1 = areas in sq. ft.
 (3) $\frac{V}{V_1} \propto \sqrt{r}$ „ V and V_1 = speeds in ft. per sec.
 (4) $\frac{W}{W_1} \propto r^3$ „ W and W_1 = weights in lbs.
 (5) $\frac{HP}{HP_1} \propto r^2$ „ HP and HP_1 = horse powers.

If one of these factors is fixed upon for the model, the others can be calculated from the particulars of any full-sized aeroplane by first finding r , and then using the above formulae. For approximate results the type of the model need not be the same as that of the full-sized machine.

The machine chosen to work from should have a good speed range or plenty of plane area, and power should be allowed in the model to make up for less efficient plane sections and greater head resistance; although there is no reason why the efficiency of a well-made model should not be nearly equal to that of its prototype.

The figure thus obtained, if not accurate, will give a good idea of what the proportions, weight and power of the model should be. In the case of the propeller, the diameter and pitch should be made to scale, and the speed of the tip in ft. per sec. should correspond to that of the prototype,

$$\text{or } V_1 = \frac{V}{\sqrt{r}} \quad V \text{ and } V_1 = \text{speed of tips in ft. per sec.}$$

I think that if direct drive is employed the engine speed will be found suitable.

It may be found best to find the size and speed of propeller by experiment.

In building a power-driven model, it is best to first obtain the engine, find its power and the total weight of the power plant, including fuel, because from these particulars it can be seen whether

it is possible to make the model light enough. In conclusion, I hope that this letter may be of interest to some of your readers.

If required, I shall be pleased to work out an example to illustrate this method, and should be glad of any criticisms.

Aeromodellists Serving with the Colours.

Mr. G. H. Kilshaw (Hoe. Sec., Liverpool Aero Research Club) writes: "I am sorry I could not let you know before with respect to our members serving with the Colours, but up to now I have been unable to get to know definitely what regiment, &c., the last named given in the list below is in. This is the cause of the delay. As soon, however, as I learn I will let you know."

"Liverpool Aero Research Club."

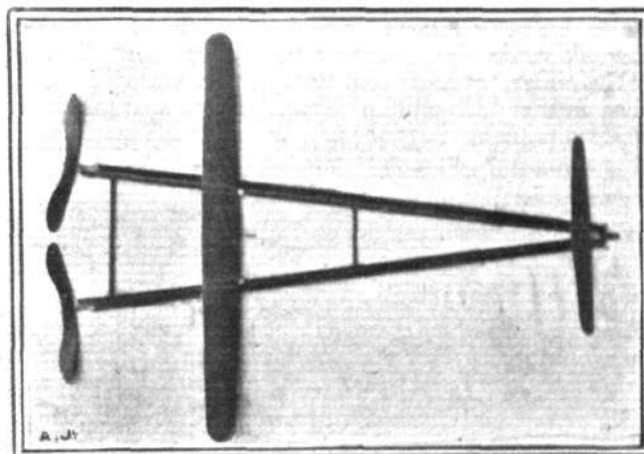
- "J. F. Connolly, R.G.A., Lancashire and Cheshire Territorials.
 "Private A. G. Pugh, 6th Cavalry Field Ambulance, 3rd Cavalry Division (British Expeditionary Force).
 "M. Payne."

"Hove Aero Club."

- "Lance-Corporal Henry Hamilton, 8th Royal Sussex Cyclists.
 "Gunner H. Knowles, I.H.C. Sussex Regiment, T.R.F.A., Foreign Service."

"Seeing in FLIGHT," writes Mr. George Englefield, "that you would be pleased to have names and details of aeromodellists serving with the colours, I am sending in mine. I have been a reader of your excellent paper for some years, and I am a keen builder of model aeroplanes, having made and sold a large number. I had also a model in the 1913 Olympia Show. It was a scale Martinsyde monoplane. I sent you photos, and details. I am building, or rather I was building before I joined, a 46-inch tractor with a 14-inch propeller, Blériot fuselage and Nieuport chassis, with main planes of my own design, tail planes and rudder of Blériot pattern."

"G. Englefield, 6th Reserve Cycling Corps, Royal Sussex Regiment. D Company."



A racing monoplane model of the "early days," by Mr. Dean.—It was made in America to 1911, is 33 ins. long (main plane 24 ins. by 2½ ins., elevator 12 ins. by 1½ ins.) and a fast flier, has 8-in. propellers, steam-bent-wood planes (white wood). 500 turns give 15 secs. duration only. Fuselage made of ½-in. square American poplar. Weight, 5 oz. Best flight with 500 turns, 180 yds.

The Paddington Club and Research Work.

We shall be pleased to hear the views of club secretaries and of others in connection with Mr. W. E. Evans' communication in our last week's issue before referring further to the matter. With respect to the "wind tunnel," we have already replied by letter, but this does not in any way affect any other remarks or information bearing on the subject.



AFFILIATED MODEL CLUBS DIARY.

Club reports of chief work done will be published monthly for the future. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Leytonstone and District AeC. (14, LEYTONSTONE RD., STRATFORD)

DEC. 13TH, flying as usual, Wanstead Flats, at 10 a.m. If wet, meet at clubroom, 211, Dames Road, Forest Gate.

Paddington and Districts (77, SWINDERBY ROAD, WEMBLEY).

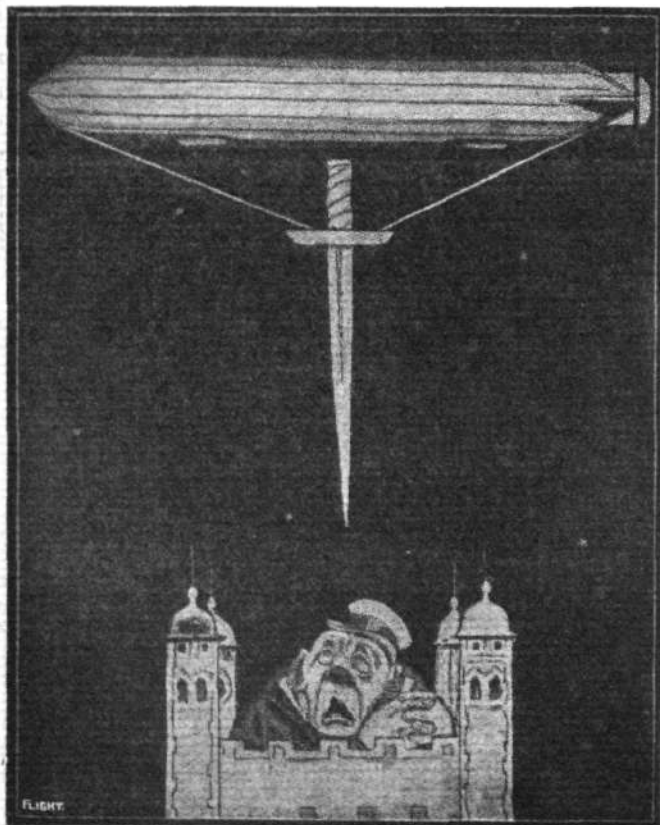
DEC. 12TH, twin-screw competition, postponed from last week. Meet, after flying, at secretary's house.

Extensions at 30, Regent Street, S.W.

It is gratifying to hear that business in connection with General Aviation Contractors, Ltd., and the various companies under its control has grown to such an extent that it has become necessary to form a new company to take over the various agency rights and general supply of aeronautical instruments, accessories, fittings and component parts throughout the British Empire. As from December 1st this part of the business will be handled and developed by the General Aeronautical Co., Ltd., 30, Regent Street, S.W., who have also secured the right to use the familiar and well-known trade mark "G.A.C." As in the case of the British Emallite Co., Ltd., and the British Anzani Engine Co., Ltd., the new company will remain under the financial control of General Aviation Contractors, Ltd., and clients will be pleased to know that arrangements have been made for the administration to remain in the same expert hands as hitherto, so that the customary individual attention to requirements will be ensured. To avoid delay, all communications relative to supplies should be addressed to the General Aeronautical Co., Ltd., 30, Regent Street, S.W.

More Motor Spirit Arrives.

SOME idea of the way in which the stocks of petrol in this country are being replenished can be gathered from a perusal of the figures showing the imports of the Anglo-American Oil Co. (Proprietors of Pratt's motor spirit) during one week recently. The oil-tanker "Iroquois," towing the gigantic barge "Navahoe," arrived in the Thames with over two and a half million gallons of motor spirit and an almost similar quantity of gas oil, while the steamers "Chester," "San Zeferino," "Cuyohoga," "Aral" and "Charlois" delivered another five and a half million gallons of illuminating oils at various ports in the U.K., in addition to two hundred and fifty thousand gallons of lubricating oils.



THE ZEPPELIN BOGEY.—A dish set before the Germans under the title of "The Sword of Damocles," being supposed to represent a Zeppelin hovering over the Tower of London.

IMPORTS AND EXPORTS, 1913-1914.

AEROPLANES, airships, balloons, and parts thereof (not shown separately before 1910). For 1910 and 1911 figures, see FLIGHT, January 25th, 1912, and for 1912 and 1913, see FLIGHT for January 17th, 1914:—

	Imports.		Exports.		Re-Exportation.	
	1913.	1914.	1913.	1914.	1913.	1914.
January ...	12,097	5,945	4,005	210	1,510	879
February ...	17,361	28,132	3,447	106	690	441
March ...	20,425	27,731	1,924	1,934	1,042	1,440
April ...	15,593	11,384	5,524	1,175	1,413	1,473
May ...	31,241	17,062	3,726	4,059	830	9,484
June ...	14,905	15,967	1,408	5,082	1,106	142
July ...	14,469	15,548	3,812	4,994	1,250	1,695
August ...	17,993	52,448	2,805	630	510	910
September ...	19,409	4,859	6,263	—	1,470	—
October ...	21,041	39,287	3,674	325	2,163	—
November ...	16,607	24,598	3,306	141	1,449	104
	221,141	242,961	39,894	18,656	13,433	16,568

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Army and Navy Contract Corporation, Ltd., Greycoat Place, Westminster.—Capital £10,500, in 10,000 shares of £1 each and 10,000 shares of 1s. each. Formed to experiment with and manufacture balloons, aeroplanes, hydroplanes, airships and aerostats, and mechanically-driven vehicles. A. H. Fellows is first director.

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Precision Metal Fittings, Ltd., 19, Queen Street, Leicester Square, W.C.—Capital £10,000, in £1 shares. To take over from F. J. La Roche and work certain processes for (1) the manufacture of lathes and special machinery for treating steel and other metallic substances, and (2) the manufacture of a special kind of steel of great strength and resistance known as "La Roche steel"; to carry on the business of manufacturers of and dealers in metal aircraft components, &c. First directors, P. M. G. Marechal and F. J. La Roche.

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Aeronautical Patents Published.

Applied for in 1913.

25,605. T. SLOPER. Gas-bags, &c., for airships.
Published December 3rd, 1914.

25,688. A. M. HARRIS. Aerial machines.
Published December 10th, 1914.

26,139. A. CHAPMAN. Stability control apparatus.

Applied for in 1914.

867. SOC. ANON. LOUIS BREGUET. Stabilizing and steering aeroplanes at slow speeds.
Published December 3rd, 1914.

5,290. A. E., H. L., AND H. O. SHORT. Aeroplanes.
9,264. E. E. GREGORY. Water, land and air machines.

Published December 10th, 1914.
8,056. J. P. CLARK. Aircraft planes.

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